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WI BROADCASTS

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AMATEUR RADIO

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EDITORIAL



BALANCE

Those who have operated push-pull amplifiers know the need for maintaining proper balance in the drive applied to the final. Lack of balance leads to loss of efficiency, in fact, a waste of drive and power input.

It is not only in strictly technical matters that we have to aim for balance; we have to look at ourselves critically from time to time to see that we are keeping a proper balance in our approach to Amateur Radio. The Amateur's Code is clear and exceedingly concise on the matter. It sets out in no uncertain terms to remind us that Amateur Radio is a hobby and, as such, it should not be allowed to interfere with the duty owed to the home, to the job or to any other of the essential ingredients of our Society. A balanced outlook is particularly necessary here.

What about your view of other Amateurs? Do you scorn the c.w. operator as a purveyor of smoke signals in an atomic age or do you accept the fact that he is having a lot of fun without taking up much of the band? Do you growl at an a.s.b. operator for putting out an unreadable signal when all that's wrong is that you haven't mastered the technique for copying this method of transmission? Or are you such a confirmed brass pounder that you regard every phone operator as a potential splatterer?

We must also make sure that the Institute itself, as the representative body of the Australian Amateurs,

acts in a level-headed way on all matters that come within its scope. Particular topics may, from time to time, require urgent action and may tend to obscure the broader view of the Institute's responsibility, but every individual action has to be related to the Institute's main objectives—to uphold the status of the Radio Amateur and to foster a friendly spirit among Amateurs.

The democratic constitution of the Institute gives every member the opportunity to express his views and to help in guiding the Institute along a proper course. With that opportunity goes the responsibility for the concerted action of the members. It is in responsibility for action that the need for a balanced outlook is most necessary. A balance that allows for the views of the other fellow and for the relationship between the Institute and the public will ensure that the drive put into our hobby produces the most efficient output in terms of interest in our hobby and maintenance of the high standing of the Radio Amateur in the eyes of the public.

The season for making resolutions is nearly here. Let us all resolve to maintain a balanced approach to the problems of the coming year. With the approach of the festive season, the Federal Executive on behalf of the Federal Council wish you all—

A MERRY CHRISTMAS AND A

HAPPY NEW YEAR.

FEDERAL EXECUTIVE

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SCIENCE IN ANTARCTICA

BY HANS J. ALBRECHT,* VK3AHH

BLIZZARDS up to 100 miles per hour, drifting snow and a desert of ice and rocks as far as the human eye can reach—this is Antarctica! And yet, this mighty sixth continent may show a friendlier face; bright sunshine and fine weather are not uncommon.

No doubt, it is cold down there! In winter nights, temperatures drop to as low as -55 degrees Fahrenheit. Even in summer, Mawson is no Queensland holiday resort! Maximum temperatures are in the vicinity of 40 degrees.

And why, then, is this huge block of ice of any interest to us? The human race has always been inquisitive. Are we not planning space ships to investigate other planets and the space outside the earth? The age of discoveries belongs to the past, but it is still human objective to gain thorough knowledge of every spot on our own globe!

Famous explorer, Captain James Cook, set the Antarctic ball rolling as early as 1774. Since then, numerous scientific expeditions were successful in widening human knowledge on Antarctica. The establishment of the Antarctic research base at Mawson aims at continuing and extending these investigations in conjunction with the work done by other nations.

When the research programme commenced early in 1954, the immediate goal was the collection of data to form a sound basis for future expeditions on the mainland. Prior to this, much preliminary work had been done in the sub-Antarctic region. In 1947-48 permanent stations were set up on Heard and Macquarie Islands, of which the latter is still in operation.

Since 1949, the entire research programme has been directed, planned, and arranged by Mr. Phillip G. Law, Director of the Antarctic Division, Department of External Affairs. In his capacity as leader of the annual Australian expeditions, Mr. Law is also responsible for the all-important overall direction of actual research work performed at the research stations of Macquarie Island, Heard Island (until 1955) and Mawson.

Mr. Law is ably assisted by scientific personnel trained and experienced in all relevant fields of science. To help towards successful evaluation of Antarctic data and adequate equipment of expeditions, experts of other scientific institutions are actively engaged in co-operative work.

Although the permanent research station was established only in 1954, observations so far already show some conclusive results. The additional equipment installed early in 1955, and the substantial expansion of the entire research programme planned for 1956 promise outstanding results. The programme may be subdivided into four main groups, namely, Geophysics, Geology, Meteorology, and Biology.

Australia intends considerable research contributions to the International Geophysical Year 1957-58, when physicists of all nations will concentrate on

world-wide geophysical investigations. The expansions planned for 1956 necessitate more special equipment. Two aircraft will be stationed at the Australian research base. Their value is unquestionable for aerial investigations and assistance to field work. In addition, other important auxiliary equipment will soon be shipped to the icy continent.

GEOPHYSICS

Under this heading, let us have a closer look at investigations in **Radio Physics and Ionosphere, Geomagnetism, Seismology**, and observations of **Aurora and Cosmic Rays**. The first mentioned branch refers mainly to upper atmospheric research. Well known applica-

that a wave having been reflected vertically by the layer can be received in the normal fashion. The height of a layer is determined by the total time taken by the wave. The intensity of the reflected signal allows information to be obtained on the characteristics of the layer. Each of the ionospheric layers, i.e. E, F1 and F2 layers, is capable of vertical reflections up to a certain frequency, its critical frequency. To investigate variations of this frequency, the transmitter and receiver are equipped for continuously-variable operation between 1 and 20 Mc., say.

The simplest methods use manually controlled tuning and band-switching of a single stage transmitter and an appro-



General View of Australian Research Station at Mawson.

A.N.A.R.E. Photo by W. R. Dingle

tions of Radio Physics are height measurements of the different ionospheric layers, observations of radio propagation phenomena and the prediction of same.

Obviously, observations of propagation have practically been carried out by the radio communication work. During 1954, Mawson kept in constant touch with Sydney, Perth, Heard Island, and South Africa, for the purpose of meteorological and normal telegram traffic. Improvements being contemplated, additional communication equipment will be set up early in 1956.

During the International Geophysical Year 1957/58 recordings of ionospheric layers will be taken at Mawson by means of an ionospheric recorder. At this stage it is advisable to briefly review various types of such equipment.

Fundamentally, a complete ionospheric recording unit consists of transmitter, receiver, and indicator, for the study of ionospheric reflections. The transmissions are pulse-modulated so

appropriate receiver. The indication is achieved by a cathode ray oscillograph whose trace can be utilised for photographic recording. The presence of a person being required, this type is more suitable for single observations of special phenomena.

Another type consists of a two or three stage transmitter with automatic mechanical tuning. Special attention must be given to automatic band-switching. The main problem is adequate mechanical and electrical tracking of the whole device. However, accurate recording can be obtained by this method. A German recorder is known to have a total frequency range of 1-16 Mc., being tuneable in a period of eight minutes.

The third method uses a fixed pulse-modulated signal on about 30 Mc. and a variable oscillator with a range of 31-50 Mc. Both frequencies are mixed, thus resulting in a total range of 1-20 Mc. being covered without band-

* 10 Belgrave Ave., Box Hill North, E.12, Vic.

switching. If wide-band amplification is employed, the only variable component is the oscillator 31-50 Mc. The mechanical requirements of the receiver can also be reduced to a minimum by mixing the incoming signal and the variable signal used for the transmitter. A constant i.f. of 30 Mc. is obtained and can be handled in the normal way. Ionospheric recorders of this type are generally designed to sweep through the complete range in a period of about 30 seconds.

The fundamental disadvantage of covering the entire range in a relatively short space of time is the inability of detecting eventual multiple vertical reflections between layer and ground. On the other hand, the short period makes this method particularly suitable for use in Arctic and Antarctic regions, where frequent changes of ionospheric characteristics are encountered. As far as is known to the writer, this principle has been employed very successfully in Kiruna (North Sweden), for a number of years. The recorder to be installed at Mawson in 1957 will also be of this type.

The study of **Ionospheric Winds** has recently become popular with scientists of this branch. Up to now, the only possible method of measuring winds in a height of 40-80 miles is the observation of the drift of meteor trails. Let us recall that meteors cause a certain ionisation on their path through the atmosphere, thus leaving an ionised trail. If the ionisation is sufficiently intense for a reflection of radio waves to take place, the drift of such trails can be observed until they have dispersed. Thus indicative information on "winds" in this part of the ionosphere can be obtained.

The operating frequency of such equipment is usually in the vicinity of 30 Mc. The use of an accurate beam antenna allows the direction to be determined. By employing pulse modulation, both transmitter and receiver may be installed at the same place. The installation of equipment of this type at Mawson is planned for 1956.

Another branch of Geophysics is called **Geomagnetism**, thus denoting the Science of the earth's magnetism. Let us recall that our good globe may be regarded, for demonstration purposes, as a magnetic solenoid, its poles being in the proximity of the geographical poles. Therefore, lines of force indicate curved paths, similar to those of a normal magnetic solenoid, and end at the poles. Without question, magnetic observations are of extreme interest in the regions close to the poles. Subdividing the total magnetic intensity into vertical and horizontal components, the latter obviously shows a much smaller intensity in polar regions than in, e.g. our latitudes. For this reason the vertical component is measured and forms, together with observations of inclination and declination, the scientific information on geomagnetic characteristics. Following preliminary investigations of the vertical intensity in 1954, a complete magnetic observatory will commence full operation in 1956.

Seismology is the Science concerning studies of earth tremors. The seismograph is the main instrument for obtaining data on maximum velocity and ac-

celeration, amplitude, and direction of any vibration of the ground at and in a distance from the seismological observatory. The instrumental set-up at Mawson does not differ, in principle, from that used elsewhere. Seismographs normally consist of a heavy mass being flexibly connected to a frame which is fixed to the ground. Seismic vibrations cause the heavy mass to attain a movement relative to the frame. Amplitude and other characteristics of this movement may then be recorded. The recording can be achieved by a simple recording pen or by optical means. Also, the measurement of capacitance variations against a fixed plate can be utilised as indicator.

One of the most spectacular aerial displays is the **Aurora**. It normally appears in the form of a band or arc of more or less coloured light with rays of light streaming towards the band or arc. These may be pulsating or station-

changes in the magnetic intensity, due to extraordinary movements of electrons and ions within the magnetic field of the earth. In most cases, ionospheric and magnetic storms accompany each other. Such storms occur more frequently in polar regions than in other parts of the world.

Concluding our general discussion of the aurora, mention must be made of the obvious relation between the eleven-year cycle of sunspot activity and occurrence of the aurora. There is, however, a difference in "phase" of both cycles.

The basic method of scientifically observing the aurora is visual observations in connection with a theodolite for determining the direction of the display. The position in space can be found by paralactic photography. Aurora observations at Mawson began in 1954.

Although the study of **Cosmic Rays** actually belongs to Nuclear Physics, its



Inside the Radio Hut; the relief party has arrived! Eric Macklin, VK1EM, taking over from Bill Storer, VK1EG.

AN.ARE. Photo by George Lowe.

ary. Very small particles, with electrical charge, so-called solar corpuscles, originate from the sun and reach the surroundings of the earth's atmosphere with high velocity. The magnetic field of our planet causes their diversion towards the poles. Upon bombardment by the solar corpuscles, the molecules of the atmospheric gas emit rays of visible light. The height of the aurora is governed by the maximum distance the corpuscles can penetrate into the earth's atmosphere. A minimum height of 50 miles is normal.

As has just been indicated, the frequency of occurrence of the aurorae is much higher in the polar regions. However, observations beyond these zones may be possible when the influx of solar corpuscles is particularly intense.

It is interesting to note that aurora displays are a visible indicator of ionospheric disturbances. The solar corpuscles also cause magnetic storms, i.e. abrupt

discussion here is justified by its connection with Geophysics. Cosmic Rays were discovered about 45-years ago, and their actual origin is still unknown. It is, however, known that particles of considerable energy, viz., Protons, Alpha-Particles, etc., pass from space into the earth's atmosphere. In consequence, a number of nuclear processes occur in the atmosphere, resulting in modifications of the original radiation and, particularly, the formation of new particles. Among others, Mesons—particles with 200 to 300 times the mass of an electron—are known to be formed. Cosmic radiation has been found to vary with latitudes. Taking one thing with another, a lot of research work is yet to be done in all parts of the world.

Equipment for Cosmic Ray investigations was installed at Mawson in 1954. Generally, Geiger counter and cloud chamber are used for such observations. The latter allows the track of a charged particle to be observed. A number of

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Light gauge solder lugs are provided so that excessive heat in soldering will not be transmitted to the crystal element.

When mounted in a microphone cage, it is recommended that the insert be suspended in rubber, to eliminate shock and vibration.

One of the connecting lugs is directly connected to the case and care should be taken to solder the metal shield of the microphone cable to this solder lug, keeping the unscreened portion of the centre conductor as short as possible to eliminate hum pick-up.

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Geiger counter tubes can be set up as a so-called Geiger counter telescope, the coincidence detector principle being utilised. One method of recording is the hourly photograph of an electrical counting system.

GEOLOGY

Geology is another important branch of Antarctic research. In addition to investigations into the petrological and structural development of the Antarctic continent itself, search for mineral deposits has been the task of all expeditions. As in other fields, Australia's contribution is considerable and promises good results.

The continent as a whole has been found to contain valuable minerals. Summarising expeditions from all contributing nations, deposits of the following minerals have so far been discovered: coal, titanium, iron, copper, molybdenum, lead, antimony, zinc, and even traces of gold.

METEOROLOGY

There is hardly any country beside Australia with more justification to setting up a meteorological research station in Antarctic regions. Australian weather forecasting has always been handicapped by the lack of observing stations between the virtual origin of cold air masses and this country. However, any reasonable and respectable weather prophecy is based on accurate and plentiful observations spread over as wide an area as possible. As is generally known, data thus obtained are sent by radio to the meteorological centre where they are evaluated and entered in a weather map. The meteorologist then determines forms and possible paths of cyclones and anti-cyclones depicted on the map, and subsequently issues the forecast. If a sufficient number of observations is not obtainable, the meteorologist's work is far more difficult and can even be deformed to rather unscientific prophecy.

Observations at ordinary meteorological stations include measurements of temperature, humidity, barometric pressure, wind velocity, and wind direction. All these components can be recorded continuously by simple recording instruments. Surface stations use normal thermometers, hygrometers, barometers, and thermographs, hygrographs, and barographs for recording. Mechanical or electro-mechanical wind recorders are utilised for investigations of the wind.

Miniature automatic stations—so-called radio sondes—are sent up into the atmosphere. A small transmitter continuously radiates data on the air layers penetrated by the sonde. A special recorder is connected to the radio sonde receiver at the ground station. There are a number of possible operating systems of radio sondes. The sonde type used in Australia measures three components and contains a single stage transmitter on 72 Mc. which is modulated by an audio oscillator. Both temperature and humidity act on different resistors in the audio oscillator circuit, thereby changing its frequency. The third component—the barometric pressure—causes a contact arm to slide over the series of contact strips which are alternatively connected to temperature or humidity resistor, respectively.

Thus the frequency of changing from one of these components to the other is an indication of the barometric pressure. With this type of radio sonde, the v.h.f. carrier frequency remains unchanged. It is, however, subject to instability usually encountered with single stage transmitters in v.h.f.

During 1954, the upper-air research at Mawson was confined to ascents of pilot-balloons. The path of such a balloon is watched by personnel at the ground station, in general by visual means only. This year brought about the installation of complete radio sonde equipment. As far as can be foreseen, 1956 will see the operation of a more advanced type of radio sonde. Its operating frequency is around 400 Mc., which allows accurate direction-finding to be performed by a beam type of antenna. Consequently, this type of radio sonde can also be used for observing



The Main Radio Mast at Mawson.

A.N.A.R.E. Photo by Phillip Law.

the actual path of the radio sonde. Considering the fact that heights of 60,000 ft. are quite normal for radio sonde ascents, it can easily be realised that comprehensive studies of upper-air winds are possible. This can be of enormous importance to Antarctic research.

It is usually impossible to base climatic information of any place in the world on less than at least two years' records. However, some of the readings obtained at Mawson in 1954 are certainly interesting. The air temperature can be around 40 degrees (Fahrenheit) in summer; obviously, such relatively high values are only reached sporadically. And, of course, you cannot imagine a block of ice as large as Antarctica to remain lukewarm in winter. While previous expeditions have proved that temperatures down to -77 degrees can be expected, the 1954 Mawson observations show minimum values in the vicinity of -25 degrees.

As reported in the log of the 1954 team, winds can be rather unfriendly, in fact you do not call them winds anymore! Blizzards of up to 100 m.p.h.

have been recorded. These, in addition to drifting snow, are the most unpleasant climatic conditions observed at Mawson.

One of the main objectives of world meteorological research is the establishment of reliable methods of long-range weather forecasting. It seems that satisfactory principles can only evolve from more detailed investigations of large-scale heat economy. This mainly comprises evaluations of the fundamental meteorological data mentioned above in addition to research in other related fields. The most important additional quantity is the solar energy received by the earth's surface. There is certainly some truth in the statement that "the good sun is the driving force behind the weather of our globe." And investigations of meteorological radiation are of particular interest in Antarctica, because very little has so far been done in this field.

In principle, such measurements are concerned with the two fundamental kinds of radiation: the incoming radiation produced by the sun, and the radiation component re-radiated by the earth's surface.

As the first quantity results in a relatively large amount of heat, its determination has been no problem to scientists for the last 100 years. However, the situation is entirely different with the latter quantity, which only comprises a relatively small amount of energy in a different spectral range. Thus its measurement is somewhat problematic. Until recently, only complex laboratory apparatus were capable of adequate readings. Some five years ago, however, this situation was remedied by the invention of a new principle enabling handy, robust and yet sensitive field instruments to be designed. This development was done in Australia. The 1954 expedition at Mawson utilised, with outstanding success, a special Antarctic type of this instrument. The evaluation of the data promises equally excellent results.

As is undoubtedly known to readers, scientific fields overlap each other, to some extent. Radiation research can also be regarded as Geophysics, likewise could the following subject—Glaciology—have been dealt with under the heading Geophysics.

Glaciology is the Science of glaciers, glacial ice, glacial formation, etc. The 1954 team at Mawson carried out some glaciological research work. Such work normally consists of observing changes in glacial characteristics, and measuring temperatures at certain depths and other quantities. Changes are best observed by marking existing characteristics. Special types of electrical thermometers are employed for measurements within the ice.

BIOLOGY

Seals, sea birds, penguins, and whales are well known members of Antarctic animal life. Investigations include studies of species, migrations, life cycles, population, and other characteristics of the animals mentioned. Vegetation is restricted to lichen, mosses, and algae. A detailed biological research programme will commence at Mawson in 1956. Work so far has been of a preliminary nature.

Handy Index to "AR" Technical Articles—1945-55

Several months back we received from a VK4 member an index of technical articles covering "A.R." back to October, 1948. Until we checked it, we had every intention of publishing it. However, a close check showed that many alterations and additions would be needed to make it suitable for publication. The project was about to be abandoned when a member of "A.R." staff undertook the task of compiling an index covering all "A.R.'s" back to 1945.

As this staff member wishes to remain anonymous we think, in fairness to him, that the originator of the idea and those who checked the work should also remain unknown.—Ed.

ANTENNAE, ANTENNA TUNING UNITS, ETC.

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144 Mc. input	120	150 watts
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Multiband Tuning Unit (note erratum in Nov.)	Oct. '53
NBFM Exciter	Apr. '50
NBFM Phase Modulator Exciter for 80, 40 and 20	Dec. '51
Neutralising an RF Amp. with a Grid Dip Meter	Mar. '53
Neutralising that Tetrode PA	Mar. '48
Overtone Oscillator Circuit	Nov. '54
Painless Extraction of Harmonics	Nov. '50
Phase Modulated NBFM Exciter	Feb. '48
Phasing System of SSSC	Sep. '49
Phasing Type SSSC Exciter—	
Part One	Dec. '52
Part Two	Jan. '53
Part Three	Feb. '53
Simple Circuit for 166-170 Mc.	Sep. '48
Simple Tx for 50 Mc.	May '51
Simple 12 Watt 144 Mc. Tx	Mar. '52
Simple 80 Metre Station	Mar. '50
Simple 80 Metre Tx	Nov. '52
"Simplicity in Fours"	Mar. '51

Simplified Design of Tank Circuit for RF Amplifiers—	
Part I.	Sep. '46
Part II.	Oct. '46
SSSC	Jul. '49
"Sure-fire" Crystal Osc.-Mult.	Aug. '54
Tank Circuit Qs	Mar. '53
The Complete Amateur—	
Crystal Osc. and Multipliers	Mar. '54
Final Tank Circuit	Apr. '54
Function and Master Switch	Jul. '54
Panel, Rack Details	Jan. '47
"Terrific Two Water"	Sep. '54
Tx Control	Feb. '48
Tx Design and Construction	Jul. '54
Tx with AC/DC Power Supply	Oct. '55
Tx With Low Harmonic Output	Nov. '55
Part One	Dec. '55
Part Two	Dec. '55
Part Three	Dec. '55
V.h.f. Portable Tx	Sep. '50
100 Watt 144 Mc. Tx using Linear Tank Circuit	May '50
2 Metres—Dry Batteries	Jul. '53
3-Band 2-Stage Tx	Jan. '49
576 Megacycles	Oct. '51
807s as Float. Screen RF Amp	

VALVES

Army VT Numbers and Commercial Numbers	Aug. '51
CW Ratings of Some Receiving Type Tubes	May '49
CW Ratings of Some Receiving Type Tubes	Nov. '52
Kinks for 807 Users (note erratum in Sept.)	Aug. '46
Optimum Operating Conditions for 807 Valves (audio)	Jul. '47
Problems with 807s and 813s	May '51
Radio Valve Practice	Jul. '49
R.M.A. Type Designation System	Oct. '48
Selection of Valves for use as Cathode Followers	Sep. '47
Short Circuits, Repairing Loose Grid Cap	Jul. '48
Taming an 807	Mar. '47
Tube Type Designation Systems	Aug. '54
Use of Electronic Valves	Nov. '55
Using Tubes Above Their Self-Resonant Frequency	Jan. '51
2C40—Lighthouse triode; up to 2700 Mc.	Nov. '45
2C40—Lighthouse triode	Oct. '48
2C43—Lighthouse triode	Oct. '46
2E25—Tetrode	Mar. '46
2E28—V.h.f. beam power amp.	Oct. '48
2E30—Beam terode	Jul. '48
3X100A1/2C39—Lighthouse triode; up to 2500 Mc.	May '48
4-250A—Tetrode	Nov. '45
559—Diode for operation in half wave rectification	Oct. '46
6AES Converter	Oct. '52
6AJ5—Pentode; v.h.f.	Nov. '45
6AU6—Pentode	May '47
6BA6—Pentode	Nov. '47
6BE8—Converter	Nov. '47
6BV7—Double diode power output pentode	Sep. '52
6N4—Triode; up to 500 Mc.	Nov. '45
6148—Beam Power Amplifier	Aug. '55
7193 (6C22)—V.h.f. triode	Jul. '48
822-S—Triode	Nov. '48
AV11 Rectifier	Jul. '46
CV6/E1148—V.h.f. triode, up to 224 Mc. (note erratum in base connections in Dec.)	Nov. '48
EF50—Pentode	Jan. '49
EF50—Pentode	Nov. '48
GL3C22—Triode; up to 800 Mc.	Nov. '45

(Continued on Page 10)

Low Drift Crystals

FOR
AMATEUR
BANDS

ACCURACY 0.02% OF
STATED FREQUENCY

3.5 Mc. and 7 Mc.

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12.5 and 14 Mc. Fundamental
Crystals, "Low Drift,"
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Prices on Application.

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VICTORIA

PAN PACIFIC SCOUT JAMBOREE, 1955-56

At the request of the Organising Committee, the Federal Executive of the Wireless Institute of Australia will install and operate transmitting and receiving equipment at the Pan Pacific Scout Jamboree, to be held from the 28th December, 1955, to 9th January, 1956, at "Clifford Park," Victoria.

"Clifford Park," a delightful stretch of country in the hills about 25 miles east of the city of Melbourne, has already been inspected by Federal Executive in order to locate the best position for the "Shack" and aerial systems.

The official Federal Station of the Wireless Institute of Australia, VK3WIA, will be on the air daily and nightly during the period of the Jamboree on the 14 Mc. band for International working, and the 7 Mc. and 3.5 Mc. bands for local and National contacts.

Directional Vee Beams on the highest hill in the camp area will span the globe in all directions; the choice of direction being chosen at the transmitter location further down the hill, at a point where Scouts from all parts of the Commonwealth and from twenty-one other Countries, together with the visiting public, will be able to make periodic visits to the "W.I.A. Ham Shack on the Hill." Fifteen thousand Scouts will be camped in the area for the Jamboree!

Approximately seven miles of road-way cover the camp area, which is broken into three main areas—Head-quarters Area controlling the water supply, electric light system and the general administration of the Jamboree; one camp site catering for 10,000 Scouts; and a second smaller site catering for 5,000 Scouts.

A Special Pan Pacific Scout Jamboree, 1955-56, Call Sign Card in colour is being printed and will be forwarded to all those confirming a contact with VK3WIA at the Camp Area, and all VK Amateurs are asked to try to make an effort to be on the air during these twelve days and to publicise the fact abroad during DX Contacts that the Federal Station will be on the 14 Mc. band looking for overseas contacts. To assist in this, the Jamboree Organising Committee is advising Scout Organisations all over the world that VK3WIA will be on the air from the Camp Site and many Scouts will have the opportunity to say "Hello" to Listeners. A special team of c.w. operators will be

rostered to maintain schedules with overseas countries when conditions do not hold good for phone contacts.

VK3WIA will be staffed and operated by Members of the Federal Executive and the Victorian Division, some of whom will be rostered to sleep at the site to guard the equipment and indirectly afford early and late contacts for those who might not be available during normal daylight hours. The installation of the equipment will be in the hands of three main working bodies Aerial Systems, Audio Equipment and Receivers, and Transmitting Equipment.

With the co-operation of the Jamboree Organising Committee, the Members of the W.I.A. and all the others who have undertaken to prepare the operating site, supply electric light, erect aerial poles, etc., the success of this enterprise will be assured.

VK3WIA will be looking out for you.
73, D. Bowie, Federal Secretary.

HANDY INDEX (Continued from Page 9)

HD59—Miniature Tetrode	Mar. '48
OA2—Regulator	Nov. '45
QQE06/40—Double tetrode	Feb. '52
RL7/VR136/CV1138—Pentode, up to 250 Mc.	Nov. '46
RL16/EC52—V.h.f. triode; up to 400 Mc.	Nov. '46
RL15—V.h.f. triode; up to 600 Mc.	Nov. '46
RL37/CV66—Grounded grid triode, up to 250 Mc.	Nov. '46
VCR139A—Cathode ray tube	Nov. '46

VFO's

Cathode Coupled Oscillator	Jun. '48
High Stability VFO	Apr. '49
Keyed VFO (note erratum in Dec.)	Nov. '48
Series Tuned ECO	Sep. '49
Series Tuned ECO (Steco)	Apr. '50
Simple VFO with Tempera- ture Compensation	Dec. '52
Single Tube VFO	Oct. '51
Stable VFO 144 Mc. Operation	Dec. '54
The Complete Amateur—VFO	Feb. '54
Utilising F58 Tunst Unit as a VFO	May '50
Variable Freq. Crystal Control	Dec. '48
Variable Frequency Oscillator	Aug. '47
VFO at VK3W1	Sep. '53
VFO Using Surplus CRV52233	
Coil Unit	Nov. '49

Merry Christmas and A Happy New Year

CARRY THE "HAM" SPIRIT WHEREVER YOU GO AND SPARE
A THOUGHT FOR YOUR LESS FORTUNATE BROTHER.

GLORAD ENGINEERING SERVICES

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A Transmitter With Low Harmonic Output

PART THREE

BY HANS RUCKERT,* VK2AOU

SPEECH AMPLIFIER AND MODULATOR

Figure 4: To get effective modulation it would be absolutely wrong to use high fidelity methods or components. We know that our DX partner will have to not much more than 5 to 6 Kc. i.f. bandwidth in his receiver to pull us through the QRM or noise. Therefore we have to change the sound character of our voice.

If we use an upper modulation frequency of 3 to 3.5 Kc. we have to suppress frequencies below 300 c.p.s. as well to bring the audio spectrum to a balance and achieve high intelligibility. So use small coupling capacitors at the pre-amplifier. An a.f. low-pass filter is in any case recommended, whether we use a clipper or not, mainly to limit our modulation band and to give other Amateurs a chance to find a clear channel. The same method helps to concentrate our transmitter energy on the frequency range our partner will receive. That is why s.s.b. is even more efficient.

The crystal mike (any quality will be good enough for 300 to 3,000 c.p.s.) is followed by a high gain a.f. stage. A twin triode (6SN7 or similar) can be switched in as a clipper. The clipping level can be adjusted with the first volume control and 10 to 15 db. is usually used without distorting the modulation or changing the voice too much. In this case we are not at all interested whether or not the voice coming from this transmitter sounds like that of the operator. All we want is as much higher sound density of the speech than the natural voice has.

This way of lifting up the low sounds to 100% modulation must cause distortion of the already strong sounds which are clipped. The frequencies generated by this method again change the voice to some degree. Harmonics of the speech frequencies which would cause splatter, a wide unused transmitted band of frequencies, interference to other stations, and scattering of transmitted power are filtered out by a low-pass filter.

Formerly, complicated filters have been popular, but many designers found that they can introduce phase differences and distortion. Two sections are sufficient to reduce the modulation to 10% at 4 Kc. The clipper stage has no gain so this is a convenient place for a switch to by-pass the clipper and filter.

Using low a.f. gain in front of the clipper and high gain after the filter makes it possible not to clip, but still to use the low-pass a.f. filter. After a further high gain a.f. stage, there is a second volume control to set the modulation to a maximum of 95%, so preventing splatter when the clipper is used. It can be regarded as a matter of courtesy to use a clipper filter.

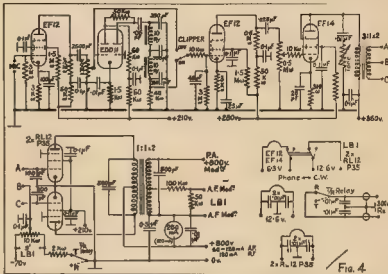
The driver stage is again the universal Telefunken pentode EF14 with plate and suppressor grid connected to get low impedance. A 6V6 as triode

would be suitable as well. The driver transformer was a mains transformer with the 300v. winding now on the primary side and the 2 x 110v. primary now used as secondary. Two Telefunken pentodes, RL12P35 (identical to the 807, 30 watts plate dissipation) operate as class AB2 final modulator valves. When receiving, the grids of these valves get -70v. bias like the scope LB1 to prevent the sound of the

receiver loudspeaker feeding the mike and the modulator plus, finally, the p.a. stage.

The modulation transformer is a 110v. mains transformer. After some calculations it was found that Amateur modulation transformers can be calculated like 50 c.p.s. mains transformers if we multiply the primary impedance by about 2.5 for class AB2 ampli-

(Continued on Page 24)



In the EF14 stage the screen dropping resistor is 50,000 ohms, and the tone control is 100,000 ohms.

TUNE INTO HIGH FIDELITY!

MULLARD 5-10 HIGH QUALITY
LOW-COST AMPLIFIER

SEND for the Mullard Book (4/3 posted). Contains amplifier circuits, equalisation networks, drawings of standing horn speaker enclosures.

SEND for quotation on the Mullard Amplifier with A. & R. output transformer.

SEND for description leaflets on the British Gramplan Mullard Amplifier.

**GOODMANS AXIETTE 101
LOUDSPEAKERS
GOODMANS AUDIOM 50
LOUDSPEAKERS
ARE IDEAL FOR THE
MULLARD AMPLIFIER**

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South Australia Wins Again

Apparently following suit from the previous winners, VK7 and VK6, who both won it twice in succession, S.A. has retained the honour for 1955. This was due to the magnificent score of VK5MS who ran even with VK3ATN at 1001 points, and the other five members who raised the average to 746. Logs entered increased by 21 to 87 and a clear lead was established over Western Australia.

This year a total of 431 logs was submitted; as from checking, 193 logs were not sent in and this can be contrasted with an Amateur population of 3,139. All territories except Antarctica participated and an award has been made for the first time in the Northern Territory to VK0TL. VK9 Division was well represented.

As the logs received showed that VK5 was well ahead, these logs were checked first; when checking was complete the amended scores still gave VK5 an unbeatable lead, so the other States were checked only to determine the award winners. These totalled 33. As these scores were very high in some cases and in one or two instances were very close, complete checking had to be undertaken. Much midnight oil was burnt and cups of tea drunk by 5CA, 5DO, 5FO, 5JD, 5KQ, 5OR, 5PM, 5QR, 5RR, 5XU and Norm Coleman.

Logs disallowed were few; principally for Rule 11, 16 logs; Rule 12, 2 logs; and a log submitted by a holder of the L.A.O.C.P. who operated on the h.f. bands using the station of a licensed Amateur submitting a log under his own Z call. As a test case, logs from two contestants in one State showed a contact with each other on the 144 Mc. band with a claim for a bonus of 25 points. This claim was disallowed on the basis that the rules stipulate that the Contest is for Interstate contacts—Rule 4.

Again the contestants entry their best to make log-checking easy and the majority used the standard log sheets. One submitted contacts under the bands worked and gave a clear picture of the bands open at any time—3.5 Mc to 21 Mc. Again, country members were well represented in the top six logs and it should be very gratifying to the Council of the Division to record that fact.

The Committee desires me to record its appreciation of the efforts of the members of the VK5 Division who freely gave of their time in the same spirit that the Contest was played, also to those who gave their homes and hospitality to the stalwarts doing the checking, the indispensable XYLs and mothers; to Brian 5CA, for his able work as Secretary of the Division, and Jim 5FO, the unofficial manager of the team.

This Contest gains in strength and interest every year and I have to thank you for the spirit with which you have entered it; the selflessness for which we honour those who died, that we might live to pursue our grand hobby.

"By your acts of grace
So shall they live."

G. M. BOWEN, Chairman Contest Com.

POINTS CLAIMED AND ALLOWED

State	Claimed	Allowed
VK2	4119	4057
VK3	3915	3796
VK4	2857	2857
VK5	4638	4479
VK6	4001	3920
VK7	2892	2824
VK9	1882	1895

STATE SCORES

South Australia		
VK5MS	1001	Average 746.50
5EN	854	Licenseses 370
5EG	806	Logs 87
5WQ	716	
5JN	576	Total Points 922.63
5GW	526	

Western Australia		
VK6RU	794	Average 654.00
6HK	762	Licenseses 189
6GU	723	Logs 68
6FD	625	
6IL	518	Total Points 539.30
6DX	501	

New South Wales

VK2AHH	791	Average 676.17
2AKV	738	Licenseses 1074
2JU	718	Logs 69
2AMR	709	
2GW	597	Total Points 719.61
2SR	506	

Victoria

VK3ATN	1001	Average 632.67
3VF	811	Licenseses 1008
3ADW	609	Logs 81
3ATR	590	
3HG	573	Total Points 683.56
3BB	412	

Tasmania

VK7PM	607	Average 473.50
7AI	528	Licenseses 126
7WN	505	Logs 52
7YY	451	
7UW	375	Total Points 668.81
7JP	375	

Queensland

VK4PQ	861	Average 482.00
4CC	852	Licenseses 321
4OV	523	Logs 46
4TN	315	
4HH	296	Total Points 551.67
4HR	245	

New Guinea

VK9DB	520	Average 300.83
9FN	465	Licenseses 43
9AU	275	Logs 13
9HO	200	
9BW	175	Total Points 391.74
9WK	170	

AWARDS

Open

VK12M	774	VK5LT*	89
2AHH	791	6RU	794
3ATN	1001	7YY	451
4CC	852	9DB	520
5EG	806	* Northern Territory.	

Phone

VK2AKV	738	VK6KJ	519
3ATR	590	7PM	607
4PQ	861	9FN	465
5MS	1001		

G.W.

VK2QL	412	VK6GA	281
3XB	367	7CH	339
4HH	296	9QC	119
SMD	207		

Listeners

N. G. Clarke	629	Points for each
J. A. Campbell	312	contact recorded.
F. H. Price	553	

OTHER LOGS

NEW SOUTH WALES					
VK1AGH	460	VK2ZY	154	VK5J	71
3PZ	368	2AH	149	3ANO	70
3AHM	343	2LG	138	3APQ	69
3AYS	343	3ZF	134	3PU	64
3ARV	338	2YC	132	3ADL	62
1CS	333	3ADQ	125	2ACN	54
2VW	314	2BO	125	2OY	54
2AN	298	2ADJ	120	2AAL	49
2PL	266	2XT	116	2AAB	41
2AMP	266	2DK	106	2OM	40
2AMB	265	3AVI	101	2ANA	38
3ACU	247	3VB	89	3AKQ	35
2AZN	228	3ADT	87	3AAW	35
2ABE	228	3AFL	86	3AQR	32
30H	213	3PV	84	3A	30
3GT	213	3TY	84	3AHT	30
3AJA	194	3AOJ	82	2SJ	25
3AI	186	3ATG	81	3VN	23
3APA	170	3KX	80	3ASW	18
2YL	167	2RF	80	2AWK	16
3AJQ	167			3RU	15

Victoria

VK3ALP	405	VK3AML	126	VK8RT	43
3ALQ	350	3ARV	123	3PG	40
3OM	323	3JE	122	3AMD	40
3ASB	320	3ND	118	3ALD	38
3GR	305	3AKX	113	3AH	31
3TS	275	3ATK	107	3AH	31
3HE	248	3KZ	105	3OJ	30
3BL	247	3JA	105	3YS	30
3AE	245	3VQ	102	3AGP	30
3AJK	240	3IL	102	3TE	30
3ABH	239	3ADU	98	3IE	30
3IS	215	3AAJ	97	3BZ	29
3TO	193	3XU	97	3ARL	28
3ADL	193	3ALE	79	3AG	27
3EA	183	3ACN	77	3HK	27
3ADG	176	3WQ	77	3BS	27
3APJ	168	3IF	62	3AKV	26
3DU	153	3HJ	62	3ARH	25
3EJ	149	3AHR	58	3AUF	25
3ATN	146	3AWS	56	3ZU	18
3NN	145	3IB	56	3ZD	16
3PR	138	3YTH	56	3AP	15
3AFP	132	3AKW	47	3ZM	16
3JF	132	3RJ	43	3JO	12
3LR	131			3AID	12

QUEENSLAND

VK4JF	841	VK4EP	80	VK4EA	37
4FC	183	4HD	80	3TD	36
4FE	180	4CK	68	4JO	24
4JD	157	4JR	67	4PR	30
4CJ	144	4CB	66	4SR	20
4NO	131	4VS	38	4CL	19
4OX	119	4ZZ	38	4CN	18
4H	114	4KZ	38	4KZ	17
4XP	111	4SF	37	4BZ	17
4MA	103	4HE	34	4XS	12
4GQ	99	4VB	32	4KS	10
4BC	90	4CZ	30	4WT	9
4EN	83	4RL	29	4PD	7
		4AQ	27		

SOUTH AUSTRALIA

VK5AP	505	VK5DO	109	VK5KE	37
5FF	437	5KU	91	5KA	37
5PT	419	5BY	85	5TD	36
5II	381	5FY	82	5OD	35
5PM	375	6RJ	87	5BR	31
5BI	361	5FJ	82	5BZ	30
5JT	337	6FJ	72	5FS	30
5PY	289	5ZY	71	5TM	28
5WC	283	5VU	67	5HW	26
5AV	261	5JO	65	5MA	26
5GQ	253	5CH	64	5CY	26
5OR	221	5CJ	64	5DB	24
5GJ	201	5LE	63	5NL	23
5SG	201	5RT	58	5JD	22
5MZ	183	5RK	57	5LN	22
5GK	179	5BK	57	5BQ	20
5PM	173	5QR	54	5XU	19
5XN	163	5BY	53	5OC	16
5BN	156	5JC	52	5JC	16
5JT	135	5FD	52	5UZ	15
5RJ	135	5CO	44	5WM	15
5BZ	131	5FO	43	5KC	14
5AK	120	5CA	41	5VW	13
5CE	125	5HM	40	5VO	13
5DH	123	5GJ	40	5EC	12
5LB	106	5UP	39	5WT	12
		5RK	29		

(Continued on Page 14)



I heard the bells on Christmas Day,
Their old familiar carols play,
And wild and sweet
The words repeat,
Of peace on earth,
Goodwill to men.

*A Merry Christmas and
A Happy and Prosperous
New Year*

AMERICAN WOLFE'S VALUE COMPANY, INC., LTD.



NATIONAL FIELD DAY, 1956

CONTEST RESULTS (Continued from Page 19)

RULES

1. The National Field Day Contest of the Wireless Institute of Australia will be held on **Sunday, 12th February, 1956**, and will be of 12 hours' duration, commencing at 0900 hours E.A.S.T. and will continue until 2100 hours E.A.S.T.

2. The Contest is limited to Portable Stations operating within the Commonwealth and its Mandated Territories on a power not exceeding 25 watts input to the final stage with the aerial connected, with a special section for fixed stations working to portable stations.

3. A portable station for the purpose of the Contest is defined as one whose power is not derived from either private or public mains, shall not be located closer than five miles airline from the home of the operator(s) and shall not be situated in any occupied dwelling or building.

4. No apparatus is to be set up or erected on the site of the portable station earlier than 24 hours prior to the commencement of the Contest. A station may be moved from one site within a State to another within the same State during the Contest.

5. More than one operator may be used in the operation of the portable station, provided that all operators are licensed Amateurs.

6. Operation may be on any of the recognised Amateur bands and more than one transmitter may be used, provided that only one transmitter is used at any one time.

7. When calling, c.w. stations will use the call "CQ NFD" and phone stations will use the call "CQ National Field Day" to indicate that they are portable stations. Attention is directed to the requirements for portable operation as defined in the P.M.G. Handbook for the Guidance of Amateur Operators.

8. Sections: The Contest is divided into four sections, namely,

- (a) Open
- (b) C.W.
- (c) Phone
- (d) Fixed stations.

The open section will consist of phone and c.w. Portable station participants may enter each of sections (a), (b), and (c), provided a separate log is entered in each case.

9. Logs must be forwarded to the Contest Committee, through the Divisional Council for membership checking in time to reach Box 1234K, G.P.O., Adelaide, not later than Saturday, 25th February, 1956

10. Logs must be filled in in the following order: Date, Time (E.A.S.T.), Band, Emission, Power Input to the final stage with the aerial connected, Call Sign of Station Contacted, RST number sent, RST number received, location of station contacted, points claimed. The log must be headed with the title of the Contest, section entered, call sign of the competitor, location of the station. At the conclusion of the log a summary of the contacts must be shown, together

with a description of the equipment used including h.t. voltage to the final stage, tube(s) in p.a. stage, antenna used, and call signs of all operators.

11. The completed log must be signed by each of the operators with a statement that the P.M.G. regulations and the rules of the Contest have been observed.

12. The decisions of the Federal Contest Committee will be final in all matters concerning the Contest.

13. Failure to completely observe the conditions of Rule 10 will lead to automatic disqualification of a competitor.

14. Scoring: For the purpose of the Field Day the following constitute VK districts: VK2, VK3, VK4, VK5 (South Australia), VK5 (Northern Territory), VK6, VK7, VK9.

15. Serial numbers must be exchanged during the Contest. Failure to record current serial numbers will mean loss of all points for that contact. Serial numbers will be as follows: The first three figures will be the RST report in the c.w. section, followed by the serial number of the contact. Serial numbers may commence with any number between 001 and 100 for the first contact, increasing by one for each successive contact. In the phone section, the first two figures will be the RS report as in the c.w. section, followed by the three serial numbers. In addition the QTH must be given in all cases.

16. Points will be awarded as follows:

Portable Stations—

- (a) For contacts with a fixed station within the Commonwealth (Rule 14) including the competitor's own State **1 point.**
- (b) For contacts with other portable stations within the same State **2 points.**
- (c) For contacts with stations in Asia, Oceania, North America, **3 points.**
- (d) For contacts with stations in other countries other than (a), (b), and (c) **5 points.**
- (e) For contacts with other portable stations outside the competitor's own State **10 points.**

Fixed Stations—

- (f) For contacts with portable stations in the Contest within the same State **5 points.**
- (g) For contacts with portable stations in the Contest outside the State **5 points.**

17. Awards: An attractive certificate will be forwarded to the outright winners in each section, namely, Open, Phone, and C.W. Certificates will also be awarded to the winners of each section in each State and to the Fixed Station in each State with the greatest number of points gained in contacting portable stations in the Contest. Further certificates may be awarded at the discretion of the Federal Contest Committee. The outright winners are not eligible for State awards.

18. Certificates will be awarded to each operator of the winning stations provided each operator has contacted at least 25% of the stations contacted.

WESTERN AUSTRALIA

VK6NF	353	VK6WG	31	VK6UF	19
6EJ	348	6XG	31	6LM	19
6MG	347	6WS	30	6LJ	18
6CZ	184	6ZL	30	6JK	18
6TK	191	6EC	29	6RS	18
6VK	187	6BO	28	6TB	17
6KO	105	6TR	27	6EH	18
6SE	103	6WT	27	6IC	16
6E2	89	6SR	26	6JS	18
6IG	87	6WB	26	6AW	15
6LJ	87	6BA	25	6OB	15
6RW	84	6MB	25	6GM	16
6FL	83	6WH	26	6OR	16
6CT	83	6RW	24	6KW	14
6LZ	83	6FZ	24	6AS	15
6WZ	36	6SJ	23	6FT	12
6HR	46	6EW	23	6WJ	11
6RC	37	6KX	23	6GB	10
6TY	33	6PK	23	6CK	11
6EZZ	33	6VM	21	6JA	9
		6WT	19		

TASMANIA

VKTJL	373	VKTVA	75	VKTL5	30
1JD	325	TBJ	75	TXC	28
7RM	304	TJZ	75	TLE	25
TJO	303	TAL	81	TXW	25
7RK	307	TCL	47	TML	22
7BR	289	TZO	46	TBR	17
7OM	280	TLL	43	7FM	14
7KA	217	TMY	44	7DS	14
7ZF	214	TAG	43	7RK	14
7DR	211	TJZ	42	7DJ	14
7IJ	190	TAC	39	7WI	13
7DW	123	7FB	38	7FJ	12
7GM	121	7KL	37	7AB	12
7CK	123	7KC	35	7WB	10
7RY	85	7AX	34	7CT	8

NEW GUINEA

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TELEVISION STATION OPERATORS' CERTIFICATE OF PROFICIENCY

Examinations for the T.S.O.C.P. will be conducted in Melbourne and Sydney on the second Tuesday in March, June, September, and December, and oral and practical examinations on the succeeding day or days. The examination is in three sections:—

Section A—Fundamental Theory, 2 hours.

Section B—Transmission Reception and Studio Techniques, 3 hours.

Section C—Practical and Oral Test.

Applicants for the examination must be 18 years of age and hold a Broadcast Station Operators' Certificate of Proficiency, or be otherwise qualified to the satisfaction of the Board.

Copies of a syllabus of the examination may be obtained from the office of the Australian Broadcasting Control Board in Melbourne or from the Superintendent, Radio Branch, in each Capital City.

The first examination will be held on 13th December, 1955, for which applications were due on 15th of November. Notification of this examination was received too late for inclusion in the November issue.

DX ACTIVITY BY VK3AHH†

PROPAGATION REPORT

3.5 Ms.: During the month of October openings to the Americas continents (0900-1200z) were reliable, while European break-throughs displayed more sporadic behaviour (1900-2030z).

7 Mc. Conditions on this band did not show any unusual features. Depending upon noise and interference level, these were the periods of band openings: Europe: 0800-0900z, long path, 1970-2100z, short path. America and Far East: 0800-1400z.

14 Mc Increased sunspot activity tremendously improved band conditions. They appeared to show peaks during the following periods: 0400-1300g for Europe and South America, 0800-1400g for South East Asia 0400-0800z Africa.

El Mo. Following the general trend, this band provided excellent conditions to all continents. However, openings did not appear to be as stable as they could have been. Europe was workable between 830z and 1300z. The American continents occupied 2100-2800z. Break-throughs in Africa were observed between 0400 and 1200z.

17/38 Mc.: As was to be expected, excellent conditions appeared during the month. Openings being somewhat more reliable in the northern part of our continent, break-throughs were observed in all States, particularly to North and South America. European and African contacts have been reported from Queensland.

NEWS AND NOTES

Number and quality of this month's reports leave no doubt that conditions have improved on all higher bands. Admittedly, the DX is a bit harder on 3.5 and 7 Mc.—but there is still something like a challenge connected with it. Do not forget 7 Mc. and, especially, 3.5 Mc.

Did you notice the new form of Prediction charts? Oh yes, the old ones were easier to follow, but this is the only way they can be printed now. Due to the same technicality, the October charts could not be obtained in time. Thank you for appreciating the difficulties!

Up-to-date news on activities in Netherlands West Indies comes from Don PJ2AE: PJ2AR and his XYL PJ2AU have made QRT in PJ-land and are now in Venezuela. Any QSL claims will be followed up by 2AJ. PJ2AE intends being back on the air soon. PJ2AV (ex-PA0FD) is active and QSLs via bureau. Due to illegal operation of a certain PJ2MB during the first DXpedition to St. Martin (call sign PJ2MA) in March, '55, prospects of future DXpeditions to this place appear to be doubtful.

ZD2DCP is looking for VK contacts on 14050 Kc. around 2130z (from 5BY).

It is understood that ZL2GX and a ZL1 will go to Kermadec Islands in January, 1958 (from NCDXC).

This is the present activity of ST2's: ST2AC c.w. and phone, ST2AR c.w., ST2DB mostly phone, and ST2NG c.w. The 14 and 21 Mc. bands are preferred (from 2AMB).

HL2AA, Seoul, South Korea, was recently licensed and is allowed to use 1.8, 7, 14, 21, 28 and 144 Mc. bands (from NCDXC).

The 3.5 Mc. band provided some good DX during October: YN1AA, YJ1DL (3504 Kc.) and CE4AD (3514 Kc.) were reported to be active (from 3ZP, ZL1CI).

And here is the echo from "over there": The following VK stations have

recently been heard on 21 Mc. phone, as reported by **Jim Hunt**, presently in England: VKs 2AKV, 2AVW, 3JA, 4EL, 4HR, 6RU and 9DB (from 3ZBO).

Sorry to hear that one of our most consistent and reliable contributors, Ray VK5RK, had to spend some time in hospital. Hope you are home again and making speedy recovery!

QTHs OF INTEREST

(from NCDXC and VKs ZAMB, ZJA, ZAHM,
and Rod de Balfour)
VU2CW J N. Suba. All India Radio, Jaipur.

VS4BA—C/o. G.P.O., Kuching, Sarawak.
XZ28S—C/o. Electricity Supply Board, Ran-
goon, Burma.

SAITL-S/Sgt. Eugene Timberger AF12304138,
580th AR SQD. Box 303, APC231, New
York, N.Y., U.S.A.

ACSPN -Via P.O. Kalimpong, India.
ET3AH—P.O. Box 499, Addis Ababa.
FD4BD—Pierre Dubourdieu, P.O. Box 106,
Lomé, Togo.

FTWAM—APO 81, New York NY, U.S.A.
ESBL—Box 4, Maerutu, Bauoliand.

ACTIVITIES

3.5 Mc Frank SQL worked a series of Ws*, Bob KZF reports YJIDL, YNIAA and CEMAD. Dave Jenkins also heard CEMAD and W. Here at LAWH the month's log is as follows: A series of Ws*, VEIZZ*, SMSAQW, CEMAD, YJIDL, OUTKY

1 Mo Laurie 2AMB heads the list with
K4CCR, V7KKE, VE3PK, VE3ABP, VE1LJ,
VE4RO, ZSTJ (1630), FK4AG, CE3AD, and
DL1JW ZS3OX Z33FY ST2AC EA4BH, HCZ,
DL1 VB1BJ. OZTB VP1JB Albert SPO work-
ed ZC4P. Fred Y86 adds DU7SV Eric BERS-
58 heard VE1QN XE3AH, DL5MK, SM5AQW,
GLU, HNT, HEC. Dave Jenkins, DL1JN.

11 Mo. cw.: 20L: CX* VQ*CB*, BVUS*,
ZS90* and VP8BD VP8BL VPILH, VQ*AD,
7B8F 1AMB CE8R*, KP2W* and Euro-
beans XWSAB, FB*CX, V86 VU YV Allan
HRL YVSBJ*, Eurobeans*, PAS2Z*, VP8KL*,
ZD8R*, ZD8Z*, XWSAB, 1-4-88, 7B8F*,

[illegible]

KW8AB* VKIEM* VS4BA* TTPZ* PJ8AJ*
and CE3RE, OS4AX VQ8CB HZ1AB AC3PN.
Allen 3AHM KV4AA* TTPZ* YV3AK*
CE3RE* YV8BZ* ZC4IP* VPK1* VPKM*

564AX*, FAEDA*, LUSABL*, VS4BA*, Euro-
peans*, CR9AI*, KWSAB*, 457KH*, 457GE*,
DU*, VS6*, Bob IRW YNIPM*, KWSAB*,
57TM Europeans*, VOQLQ*, VOQW* Syd.

RE DU7SV, KL1*, YV5BJ*, JA*, XEIMJ*,
VE1*, European*, XW8AB*, HH12FL*, ZD6BX*,
CO8DL*, Z56IX* VU1*, 45T*, VP8BM*, ZC3CT*,
YQ45S*, Z66JU*, T1FZ*, PY3AFS*, V8*,
FT3SV*, ET3AH*, LU*, CR7AR*, KZ3IF*, ZC4-
FF*, VQ6QL* and BV1US, HC, ZMR, JVR8,
*N*BP ZC4VP, FASIM Doug 8BY PX1EX*,

595L* J41B* John BH ZBICH* H21AB*
 597JDL* Austin SWO 4X4K* Europeans*
 604ZV* KV4AA* VQ8AG* LURMAH*
 60XZAM* PY4AO* PY2AJK* V54BA* KV4-
 BB* KZ5GH* CE2RE* Tim KZ5O LU4DMG*
 60V4AA CE7AA Europeans BERNIM BVDS

CRSAI COBOZ, CEAAD, DUSCO, DUICV,
DUIOR DUTSV, DUJDD, FUEH, HHZFL, KCS-
CG, KLIFI, KVABB, KV6AA, LUDMG, LUISE,
LUMAH, VU, VQELQ, XWAAB, XZBOM,
VSAHA, ZSEIX, 457KH Dave Jenkins Euro-
pean, DULAG, DUNTO, KVABB, ZCZCT, KVA-

ans. D01AQ D03DO RV00B, ZC5CT, RV4-
BK CE1DS, CE2RE, BV1US, VP0EM, 4STEK,
ASTMR, VU2HP (0040x), ZC4IP, XWSAB.

[illegible]

21 Mo.: Fred MID: G⁺, OH⁺, Ia⁺, 8M⁺, GD⁺
 SQL: PYIADA⁺, OA4C⁺, VQ4SS⁺, 8AFL: G⁺.
 B-1 8M: F⁺, G⁺, ZSS8A⁺, Z84FP⁺, HC:FS⁺.
 V33⁺, KZWSV⁺, PYIAJS⁺, HK4BS⁺, LASYE⁺.
 8M⁺, and HK, KV4BB, OH, VP8BD, TJDLM,
 YQ3DG, CP6EK, Z84FC, GW, 8HL: JAS⁺.
 *A DL⁺ JA⁺, PYIADA⁺, G⁺, VQ4SS⁺, V84

00 GM. SM. GI. ON. ZS2AT. 11. F.
 DUBV PA. 021G. Z23FL. OH. CFSK.
 00 00 00 00 00 00 00 00 00 00
 PR. GD3GVH. BHSN. 00 00 00 00
 DUTVB KWB8R. B111 31E VPR8D. Z2s.
 ZC4 0585. Perry. A4A VPR8D. CX2G.
 00 00 00 00 00 00 00 00 00 00
 FVCL. 0548. 04AC. 04ED. 04BN.
 00 00 00 00 00 00 00 00 00 00
 KX4DF. H1CFS HC1FS. KZAPP. KZ3MD.
 KZ5HA. ZS4PF. ZSSCU. ZSSGA. GD3GVH.
 00 DLJMM. DUBV. JA. KCBC. Z3BQD.
 00 00 00 00 00 00 00 00 00 00
 SS ZS4RX. HBS. JA. LH. OH. VU.
 V5VWIT. GW RFO. SM. DL/DL. GM. GW.
 1A. JA. HBB. OH. PJJAN. PYIADA.

[illegible]

KLJ, KC6 1ABH KC9CQ*, CP5EK*, CE8AB*,
DL* G*, GD3UB*, JA*, V80*, WN7AOZ*,
KZ5WZ*,

17/19 Me. Norm EAFE DU*, Ws* Angus
 SHY KH8*, Ws* 12A Ws*. 3PA Ws* and
 HC17S, VE 3PG* a series of Ws* and KH8*.
 EWM Ws* 3YS Ws* Max 4HD a series of
 Ws* 17A 17B 17C 17D 17E 17F 17G 17H 17I 17J 17K 17L 17M 17N 17O 17P 17Q 17R 17S 17T 17U 17V 17W 17X 17Y 17Z 17AA 17AB 17AC 17AD 17AE 17AF 17AG 17AH 17AI 17AJ 17AK 17AL 17AM 17AN 17AO 17AP 17AQ 17AR 17AS 17AT 17AU 17AV 17AW 17AX 17AY 17AZ 17BA 17BB 17BC 17BD 17BE 17BF 17BG 17BH 17BI 17BJ 17BK 17BL 17BM 17BN 17BO 17BP 17BQ 17BR 17BS 17BT 17BU 17BV 17BW 17BX 17BY 17BZ 17CA 17CB 17CC 17CD 17CE 17CF 17CG 17CH 17CI 17CJ 17CK 17CL 17CM 17CN 17CO 17CP 17CQ 17CR 17CS 17CT 17CU 17CV 17CW 17CX 17CY 17CZ 17DA 17DB 17DC 17DD 17DE 17DF 17DG 17DH 17DI 17DJ 17DK 17DL 17DM 17DN 17DO 17DP 17DQ 17DR 17DS 17DT 17DU 17DV 17DW 17DX 17DY 17DZ 17EA 17EB 17EC 17ED 17EE 17EF 17EG 17EH 17EI 17EJ 17EK 17EL 17EM 17EN 17EO 17EP 17EQ 17ER 17ES 17ET 17EU 17EV 17EW 17EX 17EY 17EZ 17FA 17FB 17FC 17FD 17FE 17FF 17FG 17FH 17FI 17FJ 17FK 17FL 17FM 17FN 17FO 17FP 17FQ 17FR 17FS 17FT 17FU 17FV 17FW 17FX 17FY 17FZ 17GA 17GB 17GC 17GD 17GE 17GF 17GG 17GH 17GI 17GJ 17GK 17GL 17GM 17GN 17GO 17GP 17GQ 17GR 17GS 17GT 17GU 17GV 17GW 17GX 17GY 17GZ 17HA 17HB 17HC 17HD 17HE 17HF 17HG 17HH 17HI 17HJ 17HK 17HL 17HM 17HN 17HO 17HP 17HQ 17HR 17HS 17HT 17HU 17HV 17HW 17HX 17HY 17HZ 17IA 17IB 17IC 17ID 17IE 17IF 17IG 17IH 17II 17IJ 17IK 17IL 17IM 17IN 17IO 17IP 17IQ 17IR 17IS 17IT 17IU 17IV 17IW 17IX 17IY 17IZ 17JA 17JB 17JC 17JD 17JE 17JF 17JG 17JH 17JI 17JJ 17JK 17JL 17JM 17JN 17JO 17JP 17JQ 17JR 17JS 17JT 17JU 17JV 17JW 17JX 17JY 17JZ 17KA 17KB 17KC 17KD 17KE 17KF 17KG 17KH 17KI 17KJ 17KK 17KL 17KM 17KN 17KO 17KP 17KQ 17KR 17KS 17KT 17KU 17KV 17KW 17KX 17KY 17KZ 17LA 17LB 17LC 17LD 17LE 17LF 17LG 17LH 17LI 17LJ 17LK 17LL 17LM 17LN 17LO 17LP 17LQ 17LR 17LS 17LT 17LU 17LV 17LW 17LX 17LY 17LZ 17MA 17MB 17MC 17MD 17ME 17MF 17MG 17MH 17MI 17MJ 17MK 17ML 17MM 17MN 17MO 17MP 17MQ 17MR 17MS 17MT 17MU 17MV 17MW 17MX 17MY 17MZ 17NA 17NB 17NC 17ND 17NE 17NF 17NG 17NH 17NI 17NJ 17NK 17NL 17NM 17NN 17NO 17NP 17NQ 17NR 17NS 17NT 17NU 17NV 17NW 17NX 17NY 17NZ 17OA 17OB 17OC 17OD 17OE 17OF 17OG 17OH 17OI 17OJ 17OK 17OL 17OM 17ON 17OO 17OP 17OQ 17OR 17OS 17OT 17OU 17OV 17OW 17OX 17OY 17OZ 17PA 17PB 17PC 17PD 17PE 17PF 17PG 17PH 17PI 17PJ 17PK 17PL 17PM 17PN 17PO 17PP 17PQ 17PR 17PS 17PT 17PU 17PV 17PW 17PX 17PY 17PZ 17QA 17QB 17QC 17QD 17QE 17QF 17QG 17QH 17QI 17QJ 17QK 17QL 17QM 17QN 17QO 17QP 17QQ 17QR 17QS 17QT 17QU 17QV 17QW 17QX 17QY 17QZ 17RA 17RB 17RC 17RD 17RE 17RF 17RG 17RH 17RI 17RJ 17RK 17RL 17RM 17RN 17RO 17RP 17RQ 17RR 17RS 17RT 17RU 17RV 17RW 17RX 17RY 17RZ 17SA 17SB 17SC 17SD 17SE 17SF 17SG 17SH 17SI 17SJ 17SK 17SL 17SM 17SN 17SO 17SP 17SQ 17SR 17SS 17ST 17SU 17SV 17SW 17SX 17SY 17SZ 17TA 17TB 17TC 17TD 17TE 17TF 17TG 17TH 17TI 17TJ 17TK 17TL 17TM 17TN 17TO 17TP 17TQ 17TR 17TS 17TT 17TU 17TV 17TW 17TX 17TY 17TZ 17UA 17UB 17UC 17UD 17UE 17UF 17UG 17UH 17UI 17UJ 17UK 17UL 17UM 17UN 17UO 17UP 17UQ 17UR 17US 17UT 17UU 17UV 17UW 17UX 17UY 17UZ 17VA 17VB 17VC 17VD 17VE 17VF 17VG 17VH 17VI 17VJ 17VK 17VL 17VM 17VN 17VO 17VP 17VQ 17VR 17VS 17VT 17VU 17VV 17VW 17VX 17VY 17VZ 17WA 17WB 17WC 17WD 17WE 17WF 17WG 17WH 17WI 17WJ 17WK 17WL 17WM 17WN 17WO 17WP 17WQ 17WR 17WS 17WT 17WU 17WV 17WW 17WX 17WY 17WZ 17XA 17XB 17XC 17XD 17XE 17XF 17XG 17XH 17XI 17XJ 17XK 17XL 17XM 17XN 17XO 17XP 17XQ 17XR 17XS 17XT 17XU 17XV 17XW 17XX 17XY 17XZ 17YA 17YB 17YC 17YD 17YE 17YF 17YG 17YH 17YI 17YJ 17YK 17YL 17YM 17YN 17YO 17YP 17YQ 17YR 17YS 17YT 17YU 17YV 17YW 17YX 17YY 17YZ 17ZA 17ZB 17ZC 17ZD 17ZE 17ZF 17ZG 17ZH 17ZI 17ZJ 17ZK 17ZL 17ZM 17ZN 17ZO 17ZP 17ZQ 17ZR 17ZS 17ZT 17ZU 17ZV 17ZW 17ZX 17ZY 17ZZ 17AA 17AB 17AC 17AD 17AE 17AF 17AG 17AH 17AI 17AJ 17AK 17AL 17AM 17AN 17AO 17AP 17AQ 17AR 17AS 17AT 17AU 17AV 17AW 17AX 17AY 17AZ 17BA 17BB 17BC 17BD 17BE 17BF 17BG 17BH 17BI 17BJ 17BK 17BL 17BM 17BN 17BO 17BP 17BQ 17BR 17BS 17BT 17BU 17BV 17BW 17BX 17BY 17BZ 17CA 17CB 17CC 17CD 17CE 17CF 17CG 17CH 17CI 17CJ 17CK 17CL 17CM 17CN 17CO 17CP 17CQ 17CR 17CS 17CT 17CU 17CV 17CW 17CX 17CY 17CZ 17DA 17DB 17DC 17DD 17DE 17DF 17DG 17DH 17DI 17DJ 17DK 17DL 17DM 17DN 17DO 17DP 17DQ 17DR 17DS 17DT 17DU 17DV 17DW 17DX 17DY 17DZ 17EA 17EB 17EC 17ED 17EE 17EF 17EG 17EH 17EI 17EJ 17EK 17EL 17EM 17EN 17EO 17EP 17EQ 17ER 17ES 17ET 17EU 17EV 17EW 17EX 17EY 17EZ 17FA 17FB 17FC 17FD 17FE 17FF 17FG 17FH 17FI 17FJ 17FK 17FL 17FM 17FN 17FO 17FP 17FQ 17FR 17FS 17FT 17FU 17FV 17FW 17FX 17FY 17FZ 17GA 17GB 17GC 17GD 17GE 17GF 17GG 17GH 17GI 17GJ 17GK 17GL 17GM 17GN 17GO 17GP 17GQ 17GR 17GS 17GT 17GU 17GV 17GW 17GX 17GY 17GZ 17HA 17HB 17HC 17HD 17HE 17HF 17HG 17HH 17HI 17HJ 17HK 17HL 17HM 17HN 17HO 17HP 17HQ 17HR 17HS 17HT 17HU 17HV 17HW 17HX 17HY 17HZ 17IA 17IB 17IC 17ID 17IE 17IF 17IG 17IH 17II 17IJ 17IK 17IL 17IM 17IN 17IO 17IP 17IQ 17IR 17IS 17IT 17IU 17IV 17IW 17IX 17IY 17IZ 17JA 17JB 17JC 17JD 17JE 17JF 17JG 17JH 17JI 17JJ 17JK 17JL 17JM 17JN 17JO 17JP 17JQ 17JR 17JS 17JT 17JU 17JV 17JW 17JX 17JY 17JZ 17KA

WS, W5, W6, W7 24HR a series of Ws.
Rare QSLs were received by: 2AMR; VKIDY.

VVABK, JJ, ZSAB, CSAC, SH, EAPAZ,
FBEKX, PSABE, MPABBL, TFBSV, ZBIAJK,
SWO: GDJBQ, MPABBS, VQAFG, OAM.
BERSINS HRIJZ, VQAFG, YVSE, SASCI, Rod
de Lafleur: KTIWK, HRSKH

Thanks are extended to all contributors.
Christmas Greetings to fellow Christians
everywhere!

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VK3QG requests anybody who obtained an Auto Transformer, 21 amps. S.Ph., from recent hand-out to contact him. His address is C. P. Smith, 1333a Gregory Street, Ballarat.

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AR5 Cables 7/6 each

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English Rebecca Transceivers, new, turret tuned. Contains 17
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Meters—0-150 Ma., 2 inch square, new £17/6

Meters—0-20v., 5 Ma. movement, square type, 2 inch, new, 15/-

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Phone Plug and Cable (6 ft.) Australian 3/6

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Command Receiver Right-angle Drives 2/6

Command Receiver Flexible Drives, 12 ft. long 11/-

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L.F., 6.9 Mc. Valve line-up: three 717As, two 128G7s, one
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American Low Freq. and Broadcast Band Receiver, RAX, 7
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Valve line-up: 958 diode connected into two type IN5 valves
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FREQUENCY CHANGE FOR FIFTY MEGACYCLES BAND

50-54 Mc. closes on 31st January, 1956!

50 Mc. ACTIVITY

Of particular interest to 50 Mc. enthusiasts throughout Australia, is the news that VK1IZM on Macquarie Island will again be operating on 50.94 Mc. An automatic keyer will be in use for test transmissions. VK1IZM reports that he heard New Zealand last January. Delayed arrival of the party last Xmas hampered their efforts on 50 Mc. This year, they are all set for an early start this season. Keep an eye open for them! VK1J3 (ex-VK3J3), in the receiving party, will continue on with the tests as soon as possible after the changeover later this month.

FKBAL (50.4 Mc.) hopes to have his gear ready for operation very soon. FKBAL also very keen and whilst listening during 1964-65 Ross Hull Contest, heard VKA, VRS and ZLI. Rumour has it that VRSQ will be away on holidays during this DX season, so we can only hope that other VRs will be sufficiently interested to take his place and keep Fill alive in the 5 mhz world. Last January VRSQ moved into VKA, a distance approx. 3,900 miles. It is expected that the Papua and New Guinea Division will be represented by VKIDB and VKBXX.

That stalwart, Col VKTLZ, will keep the VK7 flag flying from Launceston. Activity on the band from Hobart will certainly be welcome (particularly by the VK3 gang!) as the hop across Bass Strait to Northern Tasmania is a little short for *Le contacts*, except on very rare occasions. VKSTL will provide another interesting contact as he is located at Alice Springs. His frequency is 80.4 Mc.

A very interesting lecture was given by Mr. Mondell on T.V.I. at the October meeting of the A.S. Group. Mr. Mondell has had several years on T.V. problems in the United States. He outlined various types of T.V.I. from all types of devices and also commercial a.m. and f.m. transmitters, and finally dealt with Amateur transmitters, explaining the likely causes of interference and the means of preventing these signals getting out of the band.

The hidden tx hunt held on Wednesday night, 18th October, was well attended, seven cars taking part. The hidden tx (2ANF) was located in the bush at Pymble where there are many dead and streets which finish at the edge of gullies. However, Bob BOA and party proved they could take accurate bearings, being the first to find the vest had to be called into the location at 9.33 p.m. All were clearly close in the area and soon arrived to partake of the hot dogs and tea.

Keith ZJAA, of Tumut, was in Sydney during the month with his 3 mx mobile gear in the car. Keith was operating portable most nights, making a lot of contacts. He also got along to the V.h.f. Group meeting and met most of the 3 mx's. On his way back to Tumut, Keith went up on to Mt. Gibraltar to see the station he had set up last year with Sydney. Keith was calling from Tumut each night at 8.30 to 8.35 p.m. at 144.96 Mc., so turn your beams on Tumut at that time.

50 Mc. is showing signs of life. Stations heard on the band looking for contacts were 2AFI, 2JX, 2HE, 2ARG, 2RU, 2AJR, 2ADH, and 2XX.

Coming events of the Group are: Sunday, 26th November, Fox Hunt with IAZO as the fox; 4th December a test, with the cave explorers at Jenulan Caves with 144 Mc. gear to see the possibilities of using radio communication within the caves for exploration and rescue work.—E.G.

At the last fox hunt, the first hiding place was behind the Hawthorn tram shed, where only two of the hounds discovered the four-mourie JALY and Ray Price. The second hiding place was on a dark narrow track along the waters edge behind the Willamstown football ground. Here the only hound to discover the fox was the four-mourie JALY. The navigators, Ray JKD and John SZAL. Then on the run through Newport and Kingsville, the fox himself got lost and was heard appealing to any hound in the vicinity to please come and find him and put him back on the track to the four-mourie JALY. The fox was heard to say, "but would they help him?" Not there. They just laughed and drove off again and left him

to find his way out of the mass of streets and Housing Commission settlements. When he did finally get back on the road again he was pounced on by Eric JADU who was waiting at the Korol Creek Bridge, knowing that this was the only way he could come. Catches on the run and makes a jack out of every JARY. All seemed to have very amusing evening. Supper and the final post mortem was held at the home of Ray and Nance Price in Essendon. Thanks Nance and Ray for inviting us to your place. The outright winner for the evening was Ray. He was certainly one of the for'kiss all evening.

There was a good gathering at the last VHF Group meeting to hear and view the illustrated lecture given by Mr. Alan Hart, assisted by Peter Barnes with the slides. Both gentlemen were assisted by Radio Australia operators and their lecture was on Micro-wave Equipment in current use. Mr. Hart's amiable personality and interesting presentation of his subject, together with the excellent slides, made an enlightening evening and many points that have puzzled them on carrier line transmissions were explained. They were greatly interested in a new channel plan and its possible use between Warragul and Melbourne. The members showed their appreciation by asking many questions and Mr. Hart was most ready in answering. At the conclusion of the lecture the President, Herb BJO, thanked Mr. Barnes and Mr. Hart for their interesting lecture and the members made some complimentary remarks by a resounding round of applause.

As a sequel to this lecture, a visit has been arranged to the City West Exchange for the V.h.f Group meeting to be held on 31st Dec.

One of the highlights of the recent All Models Exhibition was the rx and rc belonging to the 532, which has been modified to fit into section of the 532, has one modification, the addition of a speech amplifier stage to allow the speaker to be heard. The rx is fitted with an on a separate chassis and supplies 200v. at 250 Ma. and 150v. at 10 Ma. for bias. The rx operates on two bands, namely two and etc. The rc is fitted with a 1000 ohm 100 Ma. band consisting of two r.f. stages, mixer and x.c. controlled osc. Tuning is done at the first and second stages. The rc is fitted with a 100 ohm, and temperature compensation to ensure stability. The first fixed L.f. (two, one stage) is 0.5 Mc. and is again converted to 1000 ohm. The rc is fitted with an audio amp. Switching is carried out at the input to the tuned L.f. the grid circuit being connected to the 1000 ohm. The rc is fitted with a 100 ohm, has its own built-in power supply and can be removed from the rack and operated as a self-contained unit. The rc is fitted with a 100 ohm, both fitted with matching front panels with home-made "Collins type" dial mechanisms. They are also fitted with dust covers to keep the equipment in the Yallowair area. Sprayed with grey, the equipment is a very excellent example of the work of the Yallowair area. It is always evident with all Joe Rogers' gear.

AN JIE is been putting terrific signals on 2 mX band, and Bert JUNE has also been making appearances on that band with terrific signals, but don't let them fool you. They have been having a local STO's as described above. Ray SATN has been spending a few days in Melbourne and worked mobile during the trip on 3 mX. He also went to Mt Dandenong and had quite a few interesting working going back to the Melbourne chaps. He was amazed at the excellent signals he received from that location. Mt Dandenong seems to be a very popular location as David SEAT has spent two or three days there recently, working on the 2 mX band.

Keep the 30-monthly Scramble in mind, the next one is to be held on Monday, 5th December. The Group would like to see more v.h.f. stations in the next scramble—Phyl Moncur, 388 Mc., highlights. No Newbies as Bert 3AA4 going port/mobile to Bill Hadden on Cup evening, 1st Nov. On his way up from Box Hill, Bert listened for signals and only 3QO's was strong enough to copy. When 2AAF arrived at the Observatory (2050 ft.) and called CQ, the 388 Mc. gang lined up on him and said: hi, very good, 3QO's, 3AA4, 3AM. Station worked were 3RI, 3QO, 3EAL, 3AN, 3ZAG, 3AVF, 3AVX and 3ANL. A.

signs were SS-9 save LAHL, who was down both ways. Bert was using p.p. T1835 with 8w input. An AR301 (modified), and a ground plane ant. on roof of car; he had with him a companion who was kept busy logging contacts (JAFJ note, said companion did NOT have blue eyes). On way home, Bert ran time for test runs.

[illegible]

Very little news this month chaps, the main items of interest being centred on 144 Mc as usual. Ken SKC has completed his 144 Mc mobile installation and several tests have already been carried out between Ken's mobile tx and the home station rx feeding a tape recorder.

Mobile duplex has also been tried, using 80 and 144 Mc. This type of operation is quite new to most of us and is extremely interesting.

Your series having been "bitten by the mobile bug" is flat out building a b.c. rx for the car; not to listen to h.c. programmes, but to feed a 3 mhz converter into it. The converter consists of a SAKS rf 12AT7 mix/quadrupler, SAKS xtal osc/mult. Incidentally, Ken's mobile tx is a modified BC25A, his converter similar to the one described above.

Les SAK had the misfortune to lose his 12 el array in the last "big blow" we had. However, Les' spirit is still strong and he intends to rebuild, then re-erect a much stronger version. SGL journeyed to Whyaalls last month complete with 1 mx gear and collapsible beam. He reported hearing SQR at 89. Nothing heard from BEN or BRIE this month, country activity being held above water by Les SAK and Camps STE.

Phil SZAD is a welcome newcomer to the ranks. Phil is using a QJE03/13 in the final 4 el. beam and xtal converter; a nice set-up to start off with Phil.

The V.h.f. Group continues to grow! Three new members in AM SEA, Tom SZAF and George (A.O.C.P. candidate) were welcomed to the last meeting of the Group held in Ron GFM's home. An apology was also received from John SZAN who intends joining, but could not be present at the meeting. Membership now must be very close to 30.

The Group were very pleased to receive letters from the VKX and VKX V.H.F. Groups, supporting this Group's effort to have the changes made to the rules considered. The Group has written to all State V.H.F. Groups and is awaiting replies from the others.

Berry Z2AG was a very welcome visitor, the first Z call to visit us. Barry gave us much interesting information about the DX workable in VKX. The most interesting was that we was the apparent lack of activity on 30 Mc. in Sydney. In Perth there are four trial and six mod. osc. trix. Rx's. Rx's are either superreg. or circuit converters. Barry's talk was very interesting and we all thanks go to him for coming to our meeting. Even though he had just stepped off the plane!

Barry was able to visit a number of the shacks in the few days he was here and was

FEDERAL, QSL, and DIVISIONAL NOTES

FEDERAL

Fed. President: W. T. Mitchell, VK3UM.
Fed. Secretary: L. D. Bowie, VK3DU, Box 2611W, G.P.O., Melbourne.
QSL Bureau: R. E. Jones, VK3RJ, 23 Landale Street, W. Melbourne.
DX C.C. Manager: A. G. Woynton, VK3UJ, 30 Park St., West Brunswick, N.18. Vic.

NEW SOUTH WALES

President: Jim Corbin, VK3YC.
Secretary: Harry Hickin, VK3ACH, Box 1734, G.P.O., Sydney.
Meeting Night: Fourth Friday of each month at Science House, Gloucester Street, Sydney.
Divisional Sub-Editor: Ted Whiting, VK3ACD, 14 Loudon Street, Five Dock.

QSL Bureau: J. B. Corbin, VK3YC, Box 1734, G.P.O., Sydney (inwards and Outwards).
Zona Correspondents: North Coast and Table-Land: Noel Hanson, VK3AHJ, Ryan Ave., West Kempsey, Newcastle; Ron McD., Stuart, VK3A51, 48 Dunbar St., Stockton, Castleside and Lakes: Harry Hawkins, VK3YL, 9 Comfort Ave., Cessnock, Western; W. H. Still, VK3WH, "Cambridge", Forbes, 84th Cass and Southern: Eric Fisher, VK3DY, 2 Oxley St., Warrungah, 1000, M.B. St., 5. Edgar, VK3AJU, Wallace St., Coolamon, St. George; Chas. Coyle, VK3YK, 44 Carlton Cres., Kogarah, 1000, Sutherland, 1000, White, VK3AAB, 33 Flavelle St., Concord.

VICTORIA

President: G. Dennis, VK3TF.
Secretary: D. L. Robinson, VK3ALD.
Administrative Secretary: Mary May, C.O.R. House, 191 Queen St., Melbourne.

FEDERAL

AMATEUR TELEVISION

An item of extreme interest to all Amateurs was the announcement by the Postmaster-General, Hon. Sir A. Gordon, M.L.A. that permits would be granted to licensees of Australian Amateur stations to engage in television experiments.

It will be remembered that for some time past the Institute has been desirous that licensees should have this special means of communication available to them. No doubt this new permission has been granted. Amateurs will take a keener interest in the techniques of television for the future.

It is particularly gratifying to know that once again the Amateur experimenter is acting as a pioneer in this field of radio. As soon as the necessary regulations are framed (and this is now in progress), numbers of Amateurs will commence the first television broadcasts in this country.

AMATEUR TELEVISION IN GREAT BRITAIN

In view of the above, it is worthy of note that an Amateur Television Convention is being organised by the British Amateur Television Club.

This, incidentally, is not the first. Another was held in 1951 and experiments were conducted as far back as 1936.
The Television Convention is being held proves that interest quickly grows and it may not be long before such a convention is held in Australia.

R.E.G.B. NEWS SERVICE

It is interesting to hear that the Radio Society of Great Britain will soon be commencing a News Bulletin Service on a frequency of 3.600 Mc. This frequency, it is hoped, will give a maximum coverage of the country.
The weekly service, which is in the hands of a small committee, aims at a "newsy" up-to-the-minute broadcast.

FEDERAL QSL BUREAU

RAY JONES, VK3EL, MANAGER

It is understood that in January next, ZL2GX is going to the Kermadec Island and will be active from that location.
Leslie VQ4, VK3EL, states that a VQ4 is in VQ4 and trying to get a rig on the air despite many difficulties and without much local encouragement.
AC3VN, a newcomer, is currently active from Bhutan on 14 Mc. c.w.
Ray VK3RH advises that he is now the only active station there since VK3OK has left Norfolk Island.

Meeting Night: First Wednesday of each month at the Radio Society, South Technical College.
Divisional Sub-Editor: Phil Moncur, 235 Union Road, Ascot Vale.

QSL Bureau: Inwards and Outwards—W.I.A., 191 Queen St., Melbourne, C.I. Vic.
Zona Correspondents: Central Western: W. J. Kinsella, VK3AKW, Magnolia, Lubbeck; South Western: W. Wines, 48 Cranley St., Warrnambool, and W. Zimmer, VK3AW7, 70 Slesene St., Newtown, North Eastern: A. D. Buchanan, VK3JFD, "Boonrodan", Wahfring, Far North Western: M. Fells, VK3GJ, 101 Lenth Ave., Mildura; Eastern: K. V. Scott, VK3SS, Johnston St., Maffra, North Western: C. Cass, Cumming Ave., Birchb.

QUEENSLAND

President: Frank Bond, VK4ZM.
Secretary: W. J. Ratler, VK4PR, Box 638J, G.P.O., Brisbane.
Meeting Night: Fourth Friday in each month at the Royal Geographical Society Rooms, Ann Street City.
Divisional Sub-Editor: F. B. Bond, VK4ZM, and W. J. Ratler, VK4PR.
QSL Bureau: Inwards: Miss VK4JF, Wanda St., Brisbane, Outwards: Miss Kjaif O'Brien, 23 Jardine St., Stafford.

SOUTH AUSTRALIA

President: G. M. Bowen, VK3XU.
Secretary: B. W. Austin, VK3CA, Box 1334K, G.P.O., Adelaide. Telephone: J 151.
Meeting Night: Second Tuesday of each month at 71 Waymouth St., Adelaide.
Divisional Sub-Editor: J. M. Coulter, VK3ND, 69 Conmurra Ave., Ackland Gardens.

VK3AI has left New Caledonia and is now located at Dept. Civil Aviation, Marguere Airport, Marcellines (France).

News of the death on 13th October of Georgios Courtel, VK3AN, at the age of 43, comes from VK3AC.

George Elliott, ex-QSL, now VE3LI, at 5255 Macdonald Avenue, Montreal, Quebec, Canada, is active on 7 Mc. c.w. George is in charge of the Canadian Broadcasting System, radio and t.v. services in Canada, which keeps him well occupied, nevertheless he is still the same keen Amateur as ever and is on the lookout for a signal on 2.5 Mc. c.w. He is still VK QSO as VE3LI was with VE3XZ in August, and since then he has QSOed VK3, 3, 4, 5, 6, 7 on 40 metres.

FEDERAL AWARDS

W.A.V.K.C.A. AWARD

Further applications have been received as per details below. From information gleaned, I have discovered that this is not as easy as it seems to secure although it was intended that it should be reasonably easy when Federal Executive drew up the rules.

The one and only reason why it is not easy is the fact that the VK3 stations in the Northern Territory do not QSL. Only one card for the Northern Territory is required and I am sure yet I find that there are literally dozens of overseas Amateurs who can qualify for the award except that they lack the VK3 Northern Territory card.
Northern Territory Amateurs who are still resident and those who are not new residents are asked to please send out their cards. This is not asking much, but it means a great deal to the many operators who need that card for their QSL. I am sure that they will be finally got a card from one of the Territory group after 75 years!

Certificates were issued during the month to the following: Eugene R. De Turck, WYIC; Albert E. Scarlett, W2CQ; W. W. Simpson, W3PCL. Total Certificates issued, 18.

D.E.C.C.

I have done a little research with a view to finding out whether it is true that DX is easier to work from than the home parts of this country than others. As a basis, I took the D.E.C.C. records of the three leaders in each call area and carefully examined them to ascertain what they had worked and when they did so.

I secured a lot of data, but quite a lot of it did not really answer all the questions that I had in mind, since I have no data on the gear used and the telephone systems. However, I did discover that the leaders seem to follow

QSL Bureau: Gen. Luxton, VK3RX, 57 Belair at the Radio Society, Mitcham, S.A. (inwards and Outwards).

WESTERN AUSTRALIA

President: F. A. T. Tredres, VK3PT.
Secretary: J. Mead, VK3LJ, Box N109, G.P.O., Perth, W.A.
Meeting Place: Perth Technical College Annex, Mounts Bay Road, Perth.
Meeting Night: Third Tuesday of the month.
Divisional Sub-Editor: R. H. Adkinson, VK3WZ, P.O. Box 127, Geraldton.
QSL Bureau: Jim Rumble, VK3RU, Box F318 G.P.O., Perth, W.A. (inwards and Outwards).

TASMANIA

President: F. J. Evans, VK3TF.
Secretary: W. G. Tait, Box 371B, G.P.O., Hobart.
Meeting Night: First Wednesday of each month at the W.I.A. Club Room, 147 Liverpool St., Hobart.
Divisional Sub-Editor: V. F. Dore, VK3JD, 29 Brent St., Glenorchy.
QSL Bureau: K.A. Johnston, VK3TX, 34 Tower Rd., Newtown.
Zona Correspondents: Northern: M. A. Chaplin, VK3CA, 55 Trevallyn Rd., Laureston, North Western: J. Patterson, VK3UW, 35 Mark St., Burnie, Tas.

PAPUA-NEW GUINEA

President: F. M. Nolan, VK3FN.
Secretary: D. F. Lloyd, VK3OQ, C/o. O.T.C. Receiving Station, Port Moresby.
Meeting Night: Second Tuesday of each month at C/o. P.O. Box 18, Rabaul.
QSL Bureau: D. R. Beadell, VK3DS, C/o. P.O. Box 167, Port Moresby.

In the one pattern, which is interesting, the following details may be of interest to the DX enthusiasts now that the DX cycle approaches and the boys are warming up their gear on 21 metres.

1. The bulk of the DX has been worked on 14 Mc. however the more difficult contacts have been made on 35 Mc. Difficult means rare in this connection.
2. 35 Mc. phone contacts made immediately after the band was returned to us after the war made a very big difference to contacts with the rarer countries. 35 Mc. c.w. did not take on so well, but I can find no valid reason for this.
3. The 7 Mc. band provided the least DX so far as confirmations in the D.E.C.C. records are concerned.

It is noticed that the VK3 stations seem to find it difficult to work into the Caribbean area and into Northern South America. The VK3 stations find that South America is difficult and the Tasmanians seem to have spots of bother with several parts of the Globe.

4. The following countries are hard to get from all over VK land. Some of them are not populated by Amateurs, of course, so even the W.I.A. stations can't break in. The list is long, but I should provide the leaders with the task for the future. Here they are: Afghanistan, Albania, Aldabra Is., Andaman and Nicobar Is., Azerbaijan, B. Bhutan, Cape Verde Is., Ceylon, China, Christmas Is., Cocos Is., Comoro Is., Crete, Faeroes Is., Franz Josef Land, Gambia, Port. Guinea, Spain, Guinea, Infil, Jan. Jan. Is., Laos, Lebanon, Liberia, Liechtenstein, and Miquelon Is., Mongolia, Principe and Sao Tome Is., Rio de Oro, St. Helena, Seychelles Is., Sierra Leone, South Orkney Is., South Sandwich Is., South Georgia Is., South Shetland Is., Svalbard, French Tongland, Tokelau Is., Tristan da Cunha Is., Turks and Caicos Is., Valdivia, Venezuela.
5. There may possibly be one or two more, but the bulk of them are as above. Quite a lot of these countries either have or have had a Ham population so that they are not all impossible places to contact. The fact remains that the leaders of the D.E.C.C. of this country do not find them easy and with one or two exceptions none of them have worked any of the countries listed above.

Go busy your antennas with the super beams and see how you can make out.

—Gordon Weyton, VK3XU, Awards Manager.

NEW SOUTH WALES

HUNTER BRANCH

The October meeting of the Hunter Branch of the N.S.W. Division of the W.I.A. will be attended by Amateurs, XYLA and YLA of the

Branch to hear Bill Storer tell of his experiences in VKI land. Bill gave a very interesting account of things in VKI and showed some educational films of the Antarctic.

Arrangements are well in hand for the Hunter Branch Xmas Social to be held on Saturday, 10th December, 1955, in the Charlestown Institute. The social committee has promised some startling surprises for this year's "do," so do not forget to come along and join in the fun.

There will be no meeting of the Hunter Branch in December, the next meeting will be held on Friday, 12th January, 1956, at 8.30 p.m. at the Newcastle Technical College, Tynes Hill. Listen to VK2AWX, the official station of the Hunter Branch, each Monday night on 14100 Kc, at 8.30 p.m. for further details.

Eric ZPD has at last obtained an ATS. Doug 2ADS active on 14C mc. Fred 2AGY busy in his new location with little time for Amateur Radio. Arch 2AWD has joined the Institute at last. Dave 2BZ active on all bands again.

Harold 2AHA hopes to have the beam working early in 1956. Jim 2ZC still looking for time to put his gear in operation again. Bill 2XT and gang are all set for Woy Woy. Varley 2SP active on 40 mc. John 2XQ and Lionel 2CB active on the "gentlemen's band." Frank 2FV still busy with alterations to QTH. Ken 3RG should be active again shortly. Charlie 3ARV planning a new aerial. Neil 2KY has forgotten all about a vest pocket beam. Les 3AOR and Leo 3QR active on 20 mc. Jim 3ABT having trouble with his pen-adaptor. Ron 3ABJ hopes to be zero again before the New Year.

The Hunter Branch takes this opportunity of wishing all members of the D.A. the Season's Greetings and the best of DX for '56.

VICTORIA

At the general meeting George 3AG gave a most interesting lecture on "Ancillary Equipment in both home stations and for field days." The lecture was illustrated with explanatory slides with a few very amusing ones here and there which brought about a good laugh from the members, particularly the final one, that of a very portly gentleman, i.e. a caricature of George himself. George delivered his lecture in a most unique manner; he had previously recorded it on tape and all he had to do was to switch on and sit back and listen

with the rest of the audience. Can't help feeling what a wonderful idea this would be for some of the members who have the knowledge to give very excellent lectures, but who lack the confidence to stand up in front of a large audience. Perhaps this might be a way for the members to benefit from some very interesting lectures that have hitherto been lost to them.

Members to the Institute were welcomed. They included 3XI, Harry Duggan, as a full member. Messrs Johnson, McKellar, Weewit, Robinson, Thomson and who have knowledge and Messrs. Kayne and McDonnell as Junior Associates. Members were very all pleased to welcome back Geoff Clarke, 3DP, ex-4PD, who has been abroad for the past three years.

The general meeting to be held on 17 December will take the form of a Xmas Break-up to which the XVIs and harmonics are cordially invited. The programme will be a selection of films suitable for the family.

From what I can get out of the OM the Annual Dinner seems to have been a huge success, but I'm feeling very peeved as he won't tell me any of the jokes. Max 3ZS' idea to run a dinner dance during next year, to which the XVIs will be allowed, seems a little terrible to me. However, I think here's the report on the dinner. On 4th November, members of the Victorian Division entertained at Dinner, officers of the P.M.G.'s Department, the Defence Services and representatives of the radio trade and press. It was very well organised by Max 3ZS on behalf of the Division and was extremely successful, over seventy members attending. This function is becoming increasingly popular and seems assured of a permanent place in our calendar of events. We hope to see even more members there next year. An official photo was taken and copies may be obtained by booking your order with either Max Hull at MU 2428 or the Victorian Division Office at MY 1087.

Ian 3ZAM, who recently attended a Scout Jamboree in Canada, has since travelled through Holland, Germany, Luxembourg and Belgium to London where he will be spending the coming two years in order to further his studies in electronics. He is considering taking a position in an electronics drawing office at Rugby. He has written home to say he has visited the Palace, the Tower and the Abbey, also the Radio Society of Great Britain where

they were all very interested in our activities here in VR. Their activities are much the same as ours, although the fox hunt is a completely new idea to them. Mobile work is a very popular past-time on all bands in G land and at a recent rally they had 15 mobile units attending.

The recent novelty weds, the 3FO's, appear to be settled in at their new QTH at Meldon as Col has been heard several times on the air. However, other recent bridegroom, Jim 3ARA, doesn't seem to have much hope of getting back on the air as his new QTH has a very large garden to be laid out, so Jim will just have to get down to earth with the "fiddle and abuse", but it is whispered that he looks longingly at his rotary clothes line.

Max 3ZS recently spent a holiday in VKS where he was entertained by the President, Gordon 8KU, at a dinner, and at their Council meeting. He had a chat over 8WI on the Sunday morning broadcast and visited IDN Adelaide where George and five other Amateurs are employed. He also visited IPS. Back there is Don Fahey in the VKI police again, but always getting the wrong column, that bloke! —Phyl Moncur

80 METRE TRANSMITTER HUNT

The 80 mc tx hunt was held in perfect sunny weather and Len 3LN, who hid the tx, chose what all the XVIs and harmonics thought was a most suitable spot. It was down at the beach at the far end of Altona. We must mention here that Laurie 3ALY, on arriving at the location, was very put out at Len's choice of location as he had found the identical spot himself a few weeks previously and was saving it up for the next time he would be hiding the tx. The antenna, which Len made very obvious just to help the chase, was tied from a 300 ohm ribbon which passed under a root of the tree holding the antenna. At this point of passing under the root, a lead was taken off at right angles to the tx, power supply, battery, etc., which was completely buried in a box under the ground and camouflaged on top with a huge stump of an old tree and some replanted weeds. Back at the junction under the root, the 300 ohm line continued on to the beach, which after much meandering was terminated with a rock tied to the end, some four to five feet deep in the sand. Len's kids sure did a lot of digging that day.

SPECIAL

BRIGHT STAR RADIO are pleased to announce an addition to their line of Crystals. We are now manufacturing—

VACUUM MOUNTED CRYSTALS

for general communication frequencies in the range 3 to 14 Mc.
Higher frequencies can be supplied.

ADVANTAGES OF THIS TYPE—

- (1) Approximately three times the activity of normal plated crystal due to the absence of air damping.
- (2) Better frequency stability due to the absence of air friction.
- (3) Plating cannot deteriorate with time and cause frequency shift.
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Price depends on the tolerance and frequency required, and will be quoted upon request.

BRIGHT STAR CRYSTALS may be obtained from the following Interstate firms: Messrs. A. E. Harrold, 123 Charlotte St., Brisbane; Gerard & Goodman Ltd., 192-196 Rundle St., Adelaide; A. G. Healing Ltd., 151 Pirie St., Adelaide; Atkins (W.A.) Ltd., 894 Hay St., Perth; Lawrence & Hanson Electrical Pty. Ltd., 120 Collins St., Hobart; Collins Radio, 409 Lonsdale St., Melbourne, Prices 5/6, 5/6 Angel Place, Sydney.

BRIGHT STAR RADIO

46 EASTGATE ST., OAKLEIGH, S.E.12 UM 3387



This, however, had the desired effect and most of the competitors followed the false lead to the rack in the sand. All were able to enjoy the fun as all competitors were on the air before the 1x was actually located by JAGD and 30J who dead-beated for first, closely followed by 32AD and 34LY. In the two hrs. Bob 30J won the privilege to hide the 1x for the next hunt.

The hunt wound up with a picnic tea on the beach, which all seemed to enjoy, in order to prevent clashing with the Zone Convention at Colas, the November hunt was postponed until Sunday, 4th December, and of course there will not be a hunt on 11th December, as advertised in last month's mag. What about coming along to the next one, you'll find it a very pleasant afternoon out with a friendly crowd whose interests are the same as your own.

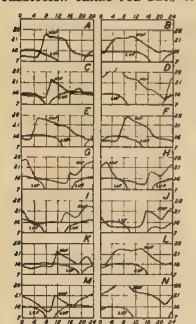
BI-MONTHLY SCRAMBLE, OCT RESULTS
The first Bi-Monthly Victorian Scramble was held on 3rd October, 1955. A good number of Victorian Amateurs participated. The majority of contestants operated on the 7 and 14 Mc. bands. The Scramble was a complete success, although a larger number of logs would have been desirable.

The top scorer in Section C was 3AAP with 16 points, earned by contacts on 7, 14, 144 and 236 Mc. Section D was won by WIA-13027 (3EAT) who listened on 7 Mc. only.

Section C 3AAP 16 points, 3ADW 15, 3ADI, 14, 3ALY 13, 3VC 12, 35R 12, 3ZAE 10, 30J 9, 3ZBE 7. Section D WIA-13027 (3EAT) 15 pts, WIA-13018 14 pts. Check logs. 3AHH. Check-ins: 3EAF and 3AAM.

Transmitting Amateurs resident in the State of Victoria and Short Wave Listeners resident in the Commonwealth of Australia are reminded that the next Scramble will take place on 8th December, 1955. The rules can be found on page 12 of "A.R." September, 1955. Logs must reach the Divisional Contest Manager, W.I.A., P.O. Div. 181 Queen St., Melbourne, C.I., on or before 31st December, 1955.—3AHH.

PREDICTION CHART FOR DEC., '56



A—Eastern Aus. to West. Europe—Short Route.
B—Eastern Australia to South Africa.
C—Eastern Aus. to West. Europe—Long Route.
D—Eastern Australia to N. East U.S.A.
E—Eastern Australia to Mediterranean.
F—Western Australia to Western Europe.
G—Eastern Australia to North West U.S.A.
H—Western Australia to North West U.S.A.
I—East Aus. to North East U.S.A.—Short Route.
J—Western Australia to North East U.S.A.
K—East Aus. to North East U.S.A.—Long Route.
L—Western Australia to South Africa.
M—Eastern Australia to Central Africa.
N—Western Australia to Central Africa.

CENTRAL WESTERN ZONE

During the month we were sorry to lose Associate Member, David Goldsworthy from this zone. He has moved to Melbourne, so we wish him all the best of luck in his new sphere of work. In local zone news, we have also gained one in Charlie 31B. He is on the air from Lubeck using his clamp tube modulated, beat-frequency oscillator. He has re-built one of his old tri's using a break-in system, and he is very pleased with the advantage a break-in has. Alan, who heard during the month was 3AAJX. Alan and Howard are very pleased to welcome you Alan, and hope you enjoy your "hamming" days with us.

Colin and JAGD, the other two in the zone, have been very busy of late so has not been able to spend much time on the air. The storms which pelted the Bawseas recently caused a fair amount of damage, and this has added to Keith's worries in keeping one of the major services in operation. Keith 3NN, Merv 3AFO and Jim 4DP, some top-up regulars, all report conditions improving on the DX bands, so guess those interested in DX will be populating those bands more often in the future.

SOUTH WESTERN ZONE

There is not very much at all this month from the zone, but the party 3A visitor to Warrnambool a couple of weeks ago. This was accompanied by his XYL. He hopes to make the new QTH Castlemaine, after approx. 10 years in the zone. The other two in the zone wish you both every success and a happy life together. Harry 3X1 is still very active but has been away from the zone with the radio owing to the pressure of work in the picture industry. Harry 3HF is coming back to his old style on 14 Mc. I hear him quite frequently working the State. 3WA is not very active as his profession does not allow him much freedom for radio. John 3AGD seems to be very keen on these things, also Jim 3ARL was up at John's recently for a few days.

It is hoped that everyone has a good time at Colas, the convention. Well, chaps, as this will most likely be the last one for a while, we wish all zone members and XYLs and all members of the W.I.A. a very Happy Xmas and a Prosperous New Year for 1956.

NORTH EASTERN ZONE

It is expected that Doug, soon to be VKLLI, will be leaving the zone this party 3A visitor to Warrnambool a couple of weeks ago. This was accompanied by his XYL. He hopes to make the new QTH Castlemaine, after approx. 10 years in the zone. The other two in the zone wish you both every success and a happy life together. Harry 3X1 is still very active but has been away from the zone with the radio owing to the pressure of work in the picture industry. Harry 3HF is coming back to his old style on 14 Mc. I hear him quite frequently working the State. 3WA is not very active as his profession does not allow him much freedom for radio. John 3AGD seems to be very keen on these things, also Jim 3ARL was up at John's recently for a few days.

Peter 3APF is often quoted on this and that, and Murray 3H2 had his photograph in a recent issue of the provincial news-sheet, but our Secretary, Earle Scoones, has not been seen since. John, our 3A1, is missing, and still about, and John 3ZBG is believed to be on 5 mX in the city. Col 3WQ visited Vm 3AXW the other day for the first time since the latter was here. These Associates "new" and old, live in Coburn are taking a promising and keen interest. Syd 3CL is doing well on 15 and 16 Mc. Frank and I are quiet and it is not going away for a while yet. Jack 3AKC is, of course, still troubled with the 60.000v note.

Den 3EB heard on the air. Henry 3HP helped Ron 3AGC to get his rig going. Jim 3AGD is now on the air, and Jim 3KJ is constructing a mobile rig round a 1925 final. Ken 3KR is being quiet on the DX, but Jack 3ZF and Vic 3ABX are very quiet. However, Howard 3AIE is having success on 30 mX with his "drooping ground plane" antenna. George 3GD and Tom 3TS are forming a "backpack" party and 15 mX DX and it will be interesting to hear how Bill 3IF is going on 30 mX. Keith Calkreaved missed the 1x last evening, but he is next time OM. Jim Harrington would like to be at the next convention when it comes around. From Dec 3CO it is learned that a Radio Club is being formed in the backpackers zone. Lastly it is understood that Howard 3TV and Bruce 3QC have been side-tracked on to colour bands.

Amateurs in this North Eastern Zone wish Amateurs everywhere a Merry Christmas and a Prosperous New Year with interesting DX.

QUEENSLAND AMATEUR RADIO CLUB

The visit of Earl WIDECAM, Radio Officer on the "Pioneer" ship, created an agreeable surprise. Many of the visitors had exchanged QSOs and QSLs. Earl addressed club members on TV, and its place with Amateur

radio transmission. The speaker was well versed in his subject, being a radio man, a field engineer with Westinghouse. We hope Earl can visit this location again in the near future.

Phil 3PG gave two interesting talks on telephone equipment. Soon Phil will be a resident in VK3 and we hope to hear him often, and with a new set of new equipment.

Chas 3XKH demonstrated the latest techniques in V.H.F. equipment at a visit recently. Later we presented an excellent supper for visiting members.

The visit of Glen 3ZB7 was welcomed among the zone fraternity. Glen's visit down here was long enough to cover some of the 40 and 80 mX boys to 8 mX. So Max 3BQ can hope to hear some signals soon.

QUEENSLAND

After quite a few months' absence, notes from the Brisbane area are again making an appearance in this issue. Bill 4YA, who started the year as Secretary, has resigned due to serious illness, and Keith 4DG has taken over as Chairman as his job took him into Perth. Frank 4TNE took the chair and Jim 4PR the job of Secretary. As they work in the same office, a lot of writing notes for "A.R." Being raw at journalism, it was decided to keep the first efforts short and snappy. Some "clips" were obtained on the subject.

4CL, who was chairman and scribe last year, is taking a well earned rest (he is one of our best 4ZM's) and 4NG, who has been away for weeks away and we hope he catches some of the elusive one. 4CC is having great success with cubical quad antennas. Clive, on toping VK4 in the R.D. Open, 4NR shifted to a new QTH and built a brand new rig, which sounds very nice. He is expected back in Brisbane around February. 4CK has been heard on 14 Mc when skip it OK. 4TT with a new "12 Special," seems to be getting out especially well. 4VJ is still blowing 'em over with s.b. and acting as a very welcome advisor to the new Christmas Club.

4YA showed slight improvement but is still very sick. All members hope Bill will be back again. 4TN reports good daylight DX. 4ZM on 31 and 32 Mc. What is your 4NR doing on 30 with HP37, now? 4GE gave another interesting Jim show at the October general meeting. 4FO is on an 800 watt rig, and is coming down on the d.c. bands. John 4TF had a trip down to VK3 recently in his "Vag," completely broke down and he dropped in the October general meeting. Jim 4V is in temporary exile from Oympie. 4WD is back in his old QTH and we hope to hear his signals rocking the bands soon. Based on the tower, he has a while because he has the hi-fi bug. Oh for the pre-war days with music on the bands.

Well, the notes may be a bit loose, but give you scribes a chance. Remember the Christmas "Do" at Anzac House on 17th December. Roll up one and all and make it a great success. A Merry Christmas and a Successful New Year and with the bands opening as they have been, it should be just that.—4ZM and 4PR.

MARYBOROUGH

4AI returned from Sydney where he visited shack of 18G and 27F. He has a new set of his speech amp. and is trying a dynamic mic. He has also put together a 60 ohm standing wave bridge. 4AG is working a bridge, 75 ohms, some efficient antenna and should soon be in operation. Ron is scratching up more grid drive for 81 Mc. operation. 4CB only listening and 4D is on the air. 4E is on the air. 4F is time rebuilding his exciter unit, using a Geosco v.f.o.—4BG.

TOWNSVILLE

Summer is certainly upon us with a vengeance as this month the temperature reached nearly 100 degrees and that is quite a high reading for Townsville. It is to be expected in the usual QRN from dry storms in the vicinity, coupled with the dust on the insulators and transformers on the line. There is a lot of local cement works. Especially as the evening dew falls and whacks the static discharge that takes place on all h.t. lines.

The October meeting took the form of a film evening and unfortunately the roll up was not as large as previously. The films were very good. The next meeting will be a film and lecture combined on "New Guinea."

Many of the operators on the bands in this locality 4G3, being in the "CQ" Contest on 21 Mc., but not much heard here due to QRN. 4W1L on holidays and giving the bands a doing over. 4X1 on the air. 4Y1 on the air. 4Z1 on the air with the fishing fleet and hoping to get a larger Tuna than the one on his special QSL card.

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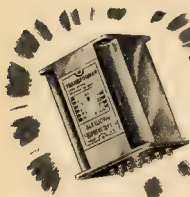
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AEI in constant touch with KAJOO re variations in tuning the shortened band. (HE says he's the only one who can hear the station, radio due to arrival of son and heir; congrats to Shirley and self, Allan. 4LR still playing with a bean and heard on 14 and 7 Mc. No more to the station as the JOK ADK has been presented with a pair of large glass bulbs, ex-Japanese fishing nets, as glass hour timers for the background of 43W's transmission. Bill Hancock, R.A.A.F., ex-VSIBD, missed out sitting for last exam. due to Her Majesty requiring his services elsewhere. So Bill hopes to appear for the exam at a later date. A special exam, and thus get on the air, Norm Prolega, of Andy 45W, anxiously awaiting results for last exam. Quite a large gathering takes place on 7 Mc. on a Sunday afternoon, Thursdays, and 10 a.m., on Sundays. Covers from Sarina to Abertown. Listen for the Black Crow, the background of 43W's transmission, plus the fowl yard, that Mike is certainly penative Andy-4RW.

SOUTH AUSTRALIA

Well, fellows, you have no doubt heard of my recent terrifying experience. Some evenings when I'm out for a walk, I find myself inadvertently wandered into one of those low dives much frequented by certain officials of the W.L.A., taxicab, precincts, secretaries, treasurers, and taxation officials. After the third or fourth coffee (very different from the hospitality offered in VK3), I was hustled into the car and driven to a place where I was told the high seas in a ten thousand tonner bound for Palembang. I realised that I had been "shanghaied" and was behind this dastardly net. Easy! With me in the car, the President was free to write the notes and Secretary able to assume the duties of Federal Councillor. What a situation! But with my sunny nature one finds compensation even in adversity. Apart from being forced to work such DX as Rome and Bolinas, I found myself in the company of some of the most sociable and introduced me to some strange but delightful dishes. I now pour oil on my "screan" with reckless abandon.

I could say more about this trip, but I can assure you that steaming under the flag of the Flying Dutchman is a most enjoyable experience. Whilst it is true that travel is educational and tends to broaden the mind, it was with regret that I could not help the good Doctor with his problem.

The monthly general meeting was well attended. Whilst the President and his minions were in the chair, and the Secretary was part of the meeting was conducted by Messrs. Whitburn and Collman. These gentlemen gave their services, wit and sarcasm most freely, in disposing of the business brought forward and surplus gear of other members. Dougan's remarks concerning the disposal of a deceased member's equipment should make us all pause and think. X-Naval types may remember the auctioning of "dead men's kit." Pieces of kit often brought fantastic prices as the money included was the money of the dead man. I would like to suggest that we cease to regard "dead men's gear" as a source of cheap equipment. Let our dead be generous and in keeping with value. The money raised may be needed by the kin's folk.

A letter from the Alice contained items of interest, one of which should give you all been handed on to our v.h.f. scribe, but there is little or no honor among Amateur journalists. Tom's request to enquire as to when he will be in the country, has been forwarded to me. I would like to suggest that we cease to regard "dead men's gear" as a source of cheap equipment. Let our dead be generous and in keeping with value. The money raised may be needed by the kin's folk.

A quotation from the "Australian Post Office" should indicate to all who read this publication that F.E., as the instrument of your Federal Council, is not a member of the Council since the past few years. With the support of members this good work can continue.

I could remember the Federal Contest Committee ever being properly introduced to members. This state of affairs should be corrected. I shall endeavour to do so without regard to their blarney. The contest committee are all keen and able men. Correction: one is a passenger, Gordon Bowen, the Chairman, commences his duty with the contest activities, most of which are connected with Amateur Radio. The way this fellow makes use of his time is amazing. Reggie Harris, as Secretary, is a most efficient and reliable fellow. He just laps it up. His orderliness has to be seen to be believed. His letters are gems. The Contest Manager, Jim Vivian, does a job which very few of our orderlies could do. His work is excellent, but his real worth will not be evident for a year or so. His analysis and sug-

gestions for improving contests will, I am sure, bring him fame. Reg Galle has a flare for pointing out the weaknesses of our discussions, particularly concerning operating matters, b.f. or v.h.f. I am the passenger.

At the special Council meeting, held to discuss emergency communications, we were honoured with the presence of the Federal Vice-President, Max Hull. He looks somewhat less V.P. than when I saw him last. Perhaps V.P.s have grown accustomed to secretaries and scribes.

It was with deep regret that I learned of the passing of Harry 43W, a true Aussie home in Darwin where he was Radio Officer in Kurru, a Department of Interior patrol vessel. He was a good friend and a good radio man. Philosophy, psychology or whatever it is, is not my line. In fact I am more at home with criminal cronies drawing circuits with a thumb nail than being pecked by a crow. I am a radio man. However, I cannot help but think that in these post-war years we Amateurs are losing, nay, have lost, our sense of humour. Until recently I thought this curious peculiar to Australia, but recent "QST" correspondence indicates that we are not alone. The Larson E. app cricles which are being written are being strongly objected to. Why? The answer takes a "leg-pull" in this country much characters as the "dremlin" were slapped down. An amusing little story was told in the inner appears in our mag. Why? Are we that short on humour that we can't take a joke at our signal or our operating habits? I think that the signal and the operating habits are not so far apart. In fact, I am sure, that the signal or so ago when he said, "You can call it 'Ham a beel, but don't mention his signal'!"

My friend, the President, who is now in Mount, advises that things are rather quiet in the South-east although the monthly meeting will be well attended. E.C.J. alleged to be on holiday was observed working on the beach. In between times, he has been heard on 7 Mc. and keeping skeds on 14 Mc. S.E.A.G. is another good-keeper, but his station is reported. E.C.J. is building. Probably preparing to go against V.I. SKU is not as active as yore, but I understand that the storm damage has been repaired. S.P.D. is doing his best to keep the club going. But he'll get tired of that. I have still to see a record changer to change the changer. R.M.S. is looking for his station when he and SKI paid him a visit—his last follow.

It was pleasing to receive a few lines from S.F.Y. outlining events in Woomera. The births and deaths and the club is doing well. There are now two more more bouncy bouncing Amateurs operating under the calls of 6QW and 6AS. S.W.R.K.J. was entertained by the Club and was able to see the club. The club is doing well. Mc. activities of this Club are on the move and when more definite news is to hand will have the pleasure of some of our details to be passed to our v.h.f. scribe.

This more or less rounds off our country coverage with thanks to those who contributed. I trust these few lines will be of good work and accept mention in the notes as an acknowledgment.

Time slugs on. 'Is now midnight. I hope I have amused some of you, annoyed others, and that I will receive some blistering letters advising just how this column should be conducted. Including some of the details for those unable to write, phone UH 3525-47D.

WESTERN AUSTRALIA

The usual monthly meeting of the VKS Division was held in the Technical School, Mounts Bay Road. Roger GRK gave the lecture for the month. His presentation was most interesting. Equipment, proved to be extremely interesting. He brought a place of v.h.f. D.M.E. equipment—the tx is in the works. In wreath—inspection. Several 2 mx addiits present were observed casting covetous glances at same! Some lively discussion took place during the meeting re the proposed club changes. A few more hands. Further information is being sought from F.E.

My predecessor, Harry 5WZ, is in the process of setting into his new QTH at Albany. Best of luck in your new enterprise Harry. Hope to hear you on the air again soon—as an Amateur.

Two calls have re-appeared on the air recently after long absences—Bill 6WZ made an appearance on 2 mx and Bill 6WZ has been heard working 40 Mc. and 7 Mc. on 14 Mc. and 6TR. 6NO also pops up occasionally. 48 mx: This band has been open to VK3 and VK3 1120 almost every night and one or two VK3s have been heard. The band is usually a fair amount of activity between VK3s on Sunday morning and afternoon.

40 mx: Some good DX has been coming through and quite a few VK3s have been heard making the most of it, working America, Africa, Asia and Europe. Bill 6WZ has been heard sheds an occasional tear at losing a ZPS the other night!

40 mc: There are also some very good DX is coming through, particularly from South and Central America. 6RU, 6HK and 6BO and others have been heard working.

40 mc: There are also some very good DX is coming through, particularly from South and Central America. 6RU, 6HK and 6BO and others have been heard working. The matter next year.

During December, a 3 mx for hunt is being run by the V.h.f. Group and short notice invitation to all VK3s who have equipment has been issued. Details may be obtained from 6BO or 6ZAA. (Phone 1120).

That's the lot for this month, chaps. You are reminded that any news may be passed to me via Phone M 1120.

TASMANIA

LEN TLE turned up with quite an excellent idea last month when he took over the notes of the Division. He will be taking over the send the summonses and libel suits to than TLE. May it please your ham-ships to continue during the month. Anyway, thanks once again Len for taking over at short notice.

The November general meeting took place in the Clubrooms on the 2nd of the month. It was a most successful meeting. TLE presided, with Secretary Bill Tait standing by on the frequency. The lecture, by Professor Baker, was entitled "Atomic Energy," and was most interesting.

A suggestion was put forward for consideration, that in view of the fact that Australia is the only country in the world to produce a message should be sent to Moscow, Olympia, in Greece, from its namesake in Tasmania.

Another suggestion was that a competition be held for the production of a portable equipment along specified standardised lines. Such a competition should produce equipment which is of great service for emergency conditions, and it has these means in hand. (Should produce some technical articles for the magazine—Sub-Editor).

A date for the next meeting has been fixed for 16th December and doubtless there will be more information on this anon.

Chris IXW has now settled in at Colac. In the meantime, the VK3s are still in the VK3s. Chris, we take this opportunity of wishing you all the very best in your new sphere of activity.

Our thanks to you for all your efforts on behalf of Amateur Radio in Tasmania. Our loss is VK3's gain.

Now R.D., having sold his business, hopes to have more time for Amateur Radio. His future, and is now busy rebuilding, so it should not be too long now before he is back on the air again. We will be glad to hear from him with another hand if we can ever find him. R.D. is trophy lovingly to our breast again. There is another addition to the TRK establishment.

Worms, come on! I think you should think of that. It's a lovely new D.X.C.C. Certificate, and we congratulate you most heartily.

Of course, Keith, it would also give me the great pleasure to give you the VK3 subject you thought of at first—yes—and the same to you.

With thanks to the VK3s for getting the upper hand with Bill 7AK on Flinders Island. It has been suggested that such outposts of the VK3s are not complete without a 3 mx rig. Bide so what you think. I shall be very effective with our expensive camera sitting on top of it.

Well all round, I think perhaps Amateur Radio 18 being neglected somewhat, because congratulations are in order for Associate Rex Belbin, on the arrival of a baby son. You might want your child, Rex, because believe you me, you're going to get QRM regardless. Owing to pressure of work, Bob Baker, who has been in the position as Councilor, and his resignation has been respectfully accepted. Over a period of years, as Councilor, he has rendered great service to the Division. We are all very grateful for his efforts on our behalf. Tom TFM has been appointed Councillor in Bob's place.

Our interest in the VK3s is being kept up by the Club very much, satisfied with our communication efforts in their recent exercise, and would like the Institute to participate in the organization of the VK3s.

LEN TLE has succumbed to the enchantment of galactic noise, and recommends it as a

complete change from the usual run of sponsored programmes. I rather rather though. Let's that the QSL position is not the best at the moment.—71D.

NORTHERN ZONE

A few are getting ready for the opening of the old 5 m. band once again. TBQ and TLZ have constructed beams and rigs are ready. TFF was putting up a similar beam recently. TRK looking very prosperous with a new car and TLZ is now mobile. TFR and TLZ have been giving 21 and 14 Mc. DX bands a thorough working and results have been satisfactory. TRL has moved from Stanley on the North-West Coast and has been on the air from King's Meadows, Launceston. TEJ was heard on the air last week—the first time for many months. TGM has completed his rebuild.

TWI has been fairly consistent the last few Sunday mornings during the broadcast. TRB has been spending his spare moments making recordings of local artists for broadcasting. TFS has shown renewed interest in the bands and purchased a converter from England. Some local Amateurs had a taste of t.v. inasmuch that interference has been caused to local taxi services in the 80 Mc. band—getting pretty close to those t.v. channels. Hains has been on the air as yet. Doug SPH has been to Flinders Island again and nearly missed out on the phone last week.

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A TRANSMITTER WITH LOW HARMONIC OUTPUT

(Continued from Page 11)

fers. The writer took the different filament windings off and extended the primary winding to nearly twice the number of turns. So we now have the 2 x 500v. winding on the primary side of the modulator and the new 2 x 220v. winding on the p.a. stage side. The result is that just the correct ratio was achieved to get never more than 85% modulation if the p.a. and modulator valves are connected to the same plate voltage.

A small part of the modulator voltage is fed to the horizontal plates of the scope.

In Fig. 4 we see some switch positions for "c.w. or phone" operation to switch the filaments of all modulator amplifier valves and the scope off when working c.w. The "T or R" switch disconnects also the B plus of the receiver from the r.f. stages to prevent overloading. Here, too, the 1 mohm grid current of the r.f. stages limits grid current of the first receiver valve. Due to stray capacities around the transmitter antenna relay the co-ax antenna cable will still conduct some transmitter r.f. to the receiver. All wiring of modulator stages is done with shielded wire.

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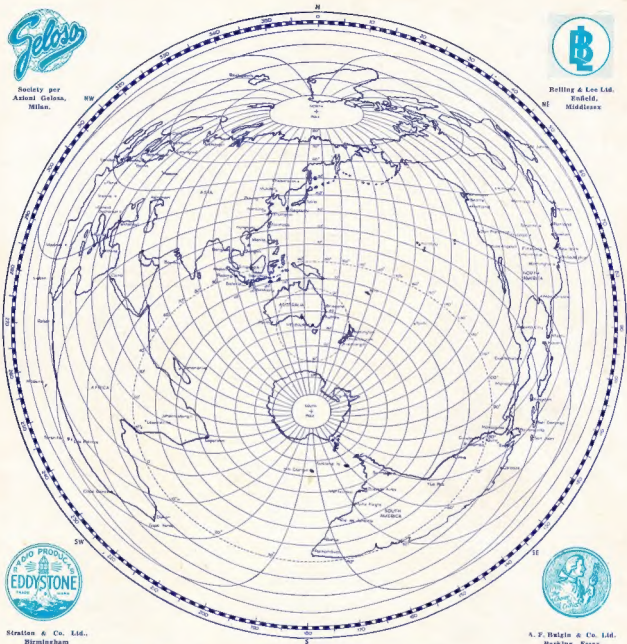
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